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Original Articles

MELANOMAS AND SOME TYPES OF SARCOMA OF THE SKIN*

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The sarcoma group of skin diseases is of exceeding interest to the dermatologist on account of the frequency in which the skin is involved even where the tumors are primary in some other organ, and also from the fact that the type best known to dermatologists, the idiopathic hemorrhagic sarcoma of Kaposi, seems to be independent of any primary growth and apparently originates from the vascular tissue of the extremities. Perhaps the one which carries the greatest interest of all, and certainly the one which has given rise to the most active controversy regarding its nature, is the so-called melanoma—a name which does not commit one to any positive view regarding its genesis. Although it sometimes originates from pigmented moles and even those which are non-pigmented, it also occurs independently of any visible change in the skin, so that perhaps the importance of these pigmented moles as potential melanomas has been somewhat exaggerated. The majority of people possess one or more of these congenital defects, but only few of them become malignant.

Before entering into the discussion of the various views on this fascinating subject I shall cite briefly two melanomas of the foot which have recently come under my observation. In both there was an absence of any history of a mole, the tumor having been preceded by a pigment spot which persisted a variable time before actual growth was noticed.

CASE 1.—A woman aged 54, a native of Germany, stated that for several years she had had a pigment spot on the inner border of her left foot near the heel. It had occasioned her no inconvenience until two years before examination, when she noticed a gradual increase in size and volume. This was slow for about a year and a half, but during the past six months the growth had been augmenting more rapidly.

Macroscopic Examination.—At the time she presented herself the lesion was about 2 inches by 1 in diameter and consisted of an irregular tumor encroaching partly on the sole of the foot. It was unevenly elevated in the center and at the periphery was level with or rose slightly above the surrounding skin. In color it shaded from dark brown to deep black, and it was covered by thick adherent scales except in one area where a dry depression furrowed the surface. This was also the blackest part of the tumor and may have been the starting point. There were no satellite metastases, no lymph node enlargement and no local pain. The patient was well-nourished and said that her general health had suffered no change.

Microscopic Examination.—The tissue (Fig. 1) presented an enormously hypertrophied horny layer containing lakes of free pigment and chromatophores in groups and isolated. The rete was irregularly thickened and undulating; the basal layer in places was preserved and in others obliterated by the encroachment of the growth. In the interspinal spaces and in lacunæ hollowed out by them were to be seen one or more chromatophores. The tumor itself occupied the upper two-thirds of the corium, giving the appearance of a growth of the papillary bodies. The outlines of the latter in some areas were well preserved; they were enlarged and club-shaped and here and there the epidermis was lifted up from them. The growth in these places had a columnar arrangement at right angles to the epidermis. In portions it was so deeply pigmented that neither cells nor intercellular substance could be made out. In areas less dense, the cells had a pale vesicular nucleus, some two, and rather small cell bodies with moderately long processes at either end. Between them was a delicate fibrillary substance. The surrounding connective tissue was markedly sclerosed and divided the growth by band-like partitions. In the tumor area the vascular development was poor, but around it were found a number of dilated vessels with an infiltration of round and pigment cells and free pigment.

CASE 2.—The other case also occurred in a woman, who gave a very indefinite history. She was about 45 years old and when first seen had a large lobulated mass on the inner side of the foot which ulcerated and discharged a bluish-black fluid. Numerous bluish-black metastases were present on the leg and thigh and the inguinal lymph nodes were enlarged. The patient died from cachexia and internal metastases. The initial tumor was from a pigment spot which had appeared several years before. Examination of a very small metastasis from the thigh showed the lesion to be made up of a collection of deeply pigmented branched and round cells. They were filled with coarse granules and clumps of pigment (Fig. 2). The cells were especially numerous about the vessels, the endothelium of which was also pigmented. In a larger secondary growth the pigmented cells formed a network which occupied the middle and lower thirds of the corium. In neither specimen was there any inflammatory reaction.

It is not always possible after growth has taken place to determine whether the melanoma originated from a congenital malformation or not. In the above cases no connection with a nevus could be established, and with the history of a pigment spot developing in middle age the antecedent condition was probably the malignant lentigo of Hutchinson. This begins as a pigment spot late in life on the face, more frequently the eyelid, and the extremities, and after some years takes on growth.

Owing to the assumption of an etiologic connection between pigmented growths and nevi the nature of melanomas is still one of the disputed questions in tumor pathology, and until the histogenesis of nevi is settled the controversy will probably be left open. Following the work of von Demiéville[1] in 1880 and von

* Read in the Section on Dermatology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Von Demiéville: Virchow's Arch. f. path. Anat., 1880, lxxxi, 333.

Fig. 1.—Melanoma of the foot. Zeiss Planar 20 mm. Showing extensive pigmentation of the tumor and epidermis. The growth is situated in the upper two-thirds of the corium and is made up of spindle cells, the majority of which are densely pigmented, and a fibrous stroma.

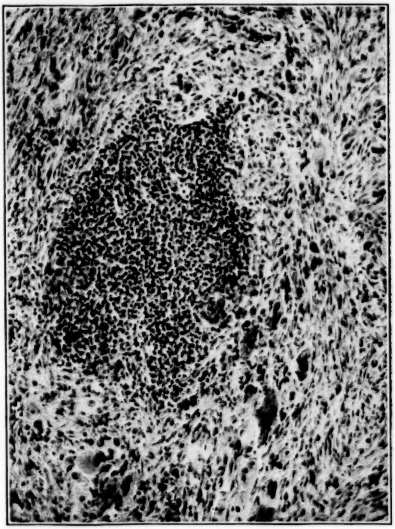

Fig. 3.—Melanotic whitlow. Zeiss 8 mm., C. O. 4. Showing bundles of spindle cells cut in various planes, large chromatophores and a central focus of lymphocytes. Pigment is present in the large cells and in variable amount in the smaller ones.

Fig. 2.—Melanoma metastasis. Zeiss 8 mm., C. O. 4. Showing chromatophores in a secondary nodule of the thigh; large irregular, round and spindle cells with fine and coarse granules of melanin.

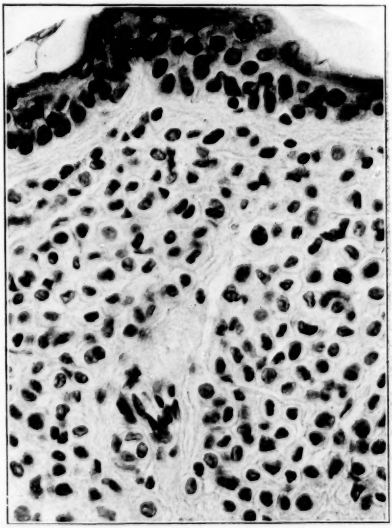

Fig. 4.—Papillary nevus. Zeiss 3 mm., N.A. 1.40, C. O. 4. Showing the "nevus cells" with vesicular nucleus, some having two. The cell bodies are clear, more or less rounded and have a sharp outline. In places they are closely apposed and form a mosaic; in others they are separated by fibers from the connective tissue stroma.

Fig. 5.—Idiopathic multiple hemorrhagic sarcoma. Zeiss Planar 20 mm. Showing the growth in the corium made up of spindle cells and numerous capillaries and spaces filled with blood.

Fig. 7.—Angiosarcoma. Zeiss 8 mm., C. O. 4. Showing large cavernous blood channels lined by endothelium or sarcoma cells and the intervening tumor tissue of round and polygonal cells, and a supporting reticulum.

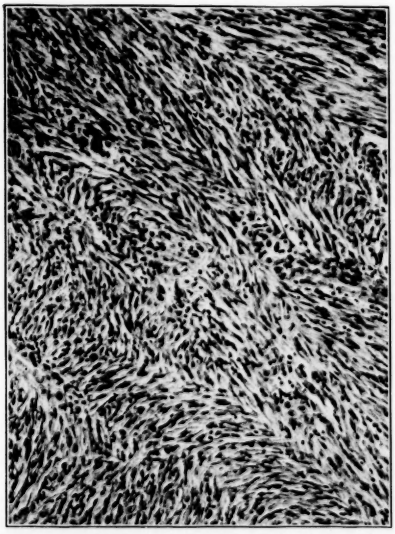

Fig. 6.—Idiopathic multiple hemorrhagic sarcoma. Zeiss 8 mm. C. O. 4. Showing the bundles of spindle cells cut in various planes and an intercellular substance.

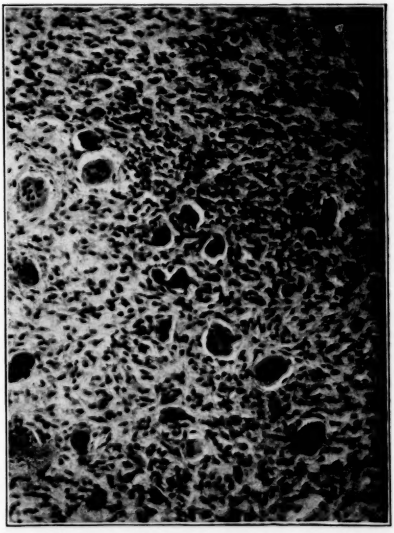

Fig. 8.—Myeloma of the finger. Zeiss 8 mm., C. O. 4. Showing the giant cells, surrounding round and small spindle cells and the delicate reticulum.

Recklinghausen[2] in 1882 these malformations were regarded as endothelial in origin; and to harmonize, all melanomas were placed in the sarcoma group. In 1895, however, Unna[3] promulgated his views on the epithelial nature of moles, and for the sake of consistency melanomas were then placed in the carcinoma group by the adherents of Unna's school. He maintained that nevus cells were true epithelial cells which had been snared off and had undergone a metaplasia from prickle cells to "soft plastic ameba-like clumps without prickles or fibrillation." Hodara[4] claimed to have demonstrated in snared-off cells the degeneration which led to the disappearance of the epithelial prickles, and, more recently, Zieler, in his experimental work at the Breslau Clinic, produced changes in the skin which he considered as further proof of the epithelial origin of nevi. He treated a healthy portion of skin in a patient with xeroderma pigmentosum for twenty minutes with Kromayer's quartz lamp and produced a marked reaction with necrosis of the papillary bodies. After several weeks a pigmented scar ensued, on examination of which he found pigment in the cutis and epidermis and in the basal layer pale cells of epithelial character and groups of the same at the periphery of and in the scar tissue.

Fig. 9.—Myeloma of the finger. Showing tumefaction of the terminal phalanx, discoloration of the nail and fungating growth beneath.

These had the arrangement and form of typical nevus cells. The question which arises is if this was not in reality an experimental epithelioma. This would not be an unnatural supposition with a predisposed skin like that in xeroderma pigmentosum.

On the side of the mesodermal origin of moles are ranged the investigators who favor the proliferation of lymphatic endothelium or vascular endothelium and perithelium or both. Virchow and others believed them to be derived from young connective-tissue cells; and, according to Soldan,[6] they had their origin in the vessels following the sheaths of nerve fibers. Borst[7] and Kreibich regard nevi as melanofibromata and Ribbert[8] invokes a distinct cell type of connective tissue origin, the chromatophore. He holds that nevi consist of two kinds of cells—alveoli of polymorphous cells and fully developed chromatophores—both genetically identical, the round ones being sharply less differentiated. Others incline toward a dual genesis. Thus Wilfred Fox[9] believes that the majority of nevi with regular columns of cells are derived from the epidermis, while a rare variety with a less uniform distribution arises from the mesoderm. Adami,[10] while favoring the connective-tissue origin of chromatophores, admits that they may also be derived from the epidermis, but argues against a purely epithelial genesis that "pigmented tumors of pure epitheliomatous type are unknown." While I agree in the main with Adami, it must not be overlooked that pigmented rodent ulcers described by Johnston[11] and the pigmented carcinoma reported by Gilchrist[12] were epithelial.

From my own studies of this perplexing subject I am in accord with the view that attributes a twofold origin to nevi. In some, the characters of the cells conform more closely with those of the epidermis and can hardly be distinguished from prolongations of the latter which enter the mole. In others, there appears to be another variety, consisting of cells with vesicular nuclei, with faint or no tinctorial properties and a well-defined border (Fig. 3). Their shape in general is round, but this may be modified by mutual pressure. Fibers from the connective tissue may be seen between individual cells and groups of them.

The sites of predilection for melanomas are the eye and the skin of the face and extremities, especially the foot. While nevi and pigment spots form a predisposing base for the development of melanomas, the latter also occur independently of them in the normal skin or other organs. Regions normally rich in chromatophores show a certain proneness, as the anus and genitalia.

Ribbert and Borst look on the primary occurrence of melanomas elsewhere than in the skin, mucous membranes or choroid with skepticism. This seems hardly justifiable in view of the number of authentic reports. Duval[13] reported a melanoma of the gall bladder, Rössle of the ovary and Frankel of the thyroid. Orth[14] published a report of a primary melanosarcoma of the adrenal and Martini[15] three cases from the axillary and cervical lymph nodes. In his report he incorporates accounts of similar primary lymph node tumors recorded by Cena, Birch-Hirschfeld, Putiate, Berger and Marchand, and seeks the explanation for this location in the common mesodermal origin of the lymph ganglia and corium and the aberration of chromatophores during fetal life into the stroma of certain nodes, which cells after a time give rise to tumor formation. In connection with the central nervous system there are also a number of instances. Virchow,[16] in 1859, reported a case of the arachnoid, all the other organs being free. Stoerck's case showed involvement of the pia and spinal cord, without other findings. Sternberg's case was a primary growth of the brain, as was also Minelli's. Hirschberg[17] reported one of the lower dorsal and upper lumbar segments of the spinal cord with metastases into the neighboring soft tissues; nowhere else was

2. Von Recklinghausen: Ueber die multiplen Fibrome der Haut, Berlin, 1882.
3. Unna: Berl. klin. Wchnschr., 1893, xxx, 13.
4. Hodara: Monatsh. f. prakt. Dermat., 1897, xxv, 205.
6. Soldan: Arch. f. klin. Chir., 1899, lix, 261.
7. Borst: Die Lehre von den Geschwülsten, 1902, p. 117.
8. Ribbert: Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's), 1897, xxi, 471; Geschwulstlehre, 1904, p. 277.
9. Fox: Brit. Jour. Dermat., 1906, xviii, 15.
10. Adami: Principles of Pathology, i, 764.
11. Johnston: Jour. Cutan. Dis., 1905, xxiii, 1.
12. Gilchrist: Jour. Cutan. Dis., 1899, xvii, 117.
13. Duval: Montreal Med. Jour., 1908, xxxvii, 270.
14. Orth: Berl. klin. Wchnschr., 1906, xxvi.
15. Martini: Ztschr. f. Krebsforsch., 1907-8, vi, 200.
16. Virchow: Virchow's Arch. f. path. Anat., xvi, 180.
17. Hirschberg: Virchow's Arch. f. path. Anat., clxxxvi, 229.

there a trace of melanotic pigmentation. As Hirschberg points out, physiologic chromatophores with iron-free pigment are present in the central nervous system, and there is also an embryologic relationship between those of the skin, choroid and leptomeninges in that they have a common matrix in their development. Furthermore, from the observations of Ribbert,[18] Kölliker, and others, chromatophores are present in the adventitia, especially of the pial arteries which pass into the central nervous system, and these may undergo primary proliferation.

Melanomas developing on moles may give rise to marked local changes, or, more rarely, to none at all, the first indication of malignancy being metastasis. Or, the mole may ulcerate and partially heal or take on slow growth; meanwhile, the neighboring lymph nodes enlarge and, if ulceration over them takes place, discharge an inky black fluid, the patient dying from recurrent hemorrhages or from ulceration of some large vessel in the neighborhood. Again, the mole may increase in size and color and produce lymph node and visceral metastases, death ensuing from cachexia or interference with some vital organ. In the benign type, the so-called melanotic "rodent ulcer," the node becomes locally malignant, but no metastasis takes place. In Galloway's[19] and Crocker's[20] cases of melanoma of the foot the tumor began as a "blister" which ruptured and healed several times and then developed into a growth.

Melanotic whitlow, which, according to Hutchinson, is due to injury, is seen at the base of one of the finger- or toe-nails, has the features of an onychia with pigmentation, and soon develops into a fungating tumor which is as malignant as the other forms. Figure 4 shows a section of such a growth, in which the sarcoma element was very evident. It was made up of fasciculi of connective-tissue cells with intercellular fibrillæ. The cells varied in size, were spindle or oval in shape and had pale-staining nuclei. Some were pigmented, others not. In outlying areas there was also an alveolar arrangement of round and polymorphous cells of large size with a sparing amount of intercellular substance. Pigment in this portion was lacking. The tumor was very vascular and in the lumina of a number of vessels a growth was noted. A number of multinucleated cells were also seen. A round-celled infiltration was quite marked, a focus being present in the center of the illustration.

The rule is for melanomas to form more metastases than do any other tumors, dissemination taking place both by the lymph and the blood stream, so that the regional lymphatics and all the viscera, intestines and serous membranes may show secondary involvement. This tendency to metastasize is due to growth near the vessels and into them, so that the cells are carried through the entire vascular system. In advanced cases the leucocytes and the endothelial cells lining the vessels take up pigment so that the tissues in general may be tinged and there may be in addition melanemia and melanuria. Not all tumors are equally malignant and dissemination may be delayed for a long period. Just gives the average duration as three years, but death within a year has followed, and as an outside limit may be mentioned Dobbertin's case of brain tumor which appeared ten years after a primary tumor of the eye. Whitfield[21] divides melanomas into two classes, the common highly malignant type with early and general dissemination and the slow-growing variety with little tendency to metastasis. Rarely the regional lymph nodes escape even in the malignant type, as in Gilchrist's[22] case in which dissemination took place by the blood stream only, and hundreds of metastases were present without involvement of the lymphatics.

The color of the metastases bears no relation to that of the original tumor, as the latter may be deeply pigmented and the daughter cells colorless, and conversely, with a slightly pigmented growth the metastases may show all the shades from a light brown to an intense blue-black.

Microscopically, melanomas show a varying picture, not only in different growths but in different portions of the same tumor. There may be an alveolar arrangement of large or small cells in one part and bundles of spindle or branched and stellate cells in another. The amount of pigment is also a varying factor; in some areas it may be so dense as to obscure the nucleus and cell body and in others it may be entirely lacking. In spite of this polymorphism, Ribbert[23] believes that all of the cells originate from one and the same type—namely, the chromatophore—by reason of which he designated these tumors "chromatophoromata." The round unpigmented, indifferent elements represent an embryonal stage of the chromatophore and are found in the most active infiltrating parts of the tumor, while the fully developed chromatophores represent the adult and less active stage. The large, round, densely pigmented cells he regards as degenerated forms, which, like dead amebas, have become rounded, the diffuse pigmentation being the final stage in the life history of the cell. The small, round polymorphous cells are collected into alveoli, many of which have arisen by the growth of the cells into the lymph and blood vessels and filling and distending them. The spindle cells are collected into bundles, which in the main run parallel to the blood vessels. Ribbert found that in nevi the pigmented cells were usually of spindle shape and had a tendency to arrange themselves about the vessels. They may, however, also be pigment-free, although the pigmented ones are the characteristic element, and it is most likely that melanomas arising from nevi do so from the fully developed chromatophore rather than from the cell clusters, though these can not be ruled out. When they do arise from pre-existing developmental anomalies, he adds, it is probable that in them the chromatophores were more numerous from the beginning and were undergoing a slow but continuous increase.

Borst and others also pointed out that the most pigmented portions of melanosarcomas were those closely related to the vessels. Lubarsch and Rössle explain this by the fact that the cells lying nearest the vessels receive more nourishment; hence develop and pass through their evolution more rapidly. The intensity of pigmentation then does not point to its hematogenous origin, but to more favorable conditions for development.

Melanin consists of fine amorphous granules varying from golden brown to inky black. It is soluble in ether, alkalies and strong acids and is bleached by chlorin, peroxid of hydrogen and potassium permanganate. Being the final stage of the cell, its increased production leads to death of the cell, and nucleus and protoplasm may disappear, leaving only heaps of pigment. Von Rindfleisch is of the opinon that pigment

18. Ribbert: Cited by Hirschberg, Virchow's Arch. f. path. Anat., 1906, clxxxvi, 229.
19. Galloway: Brit. Med. Jour., 1897, p. 873.
20. Crocker: Diseases of the Skin, Edition 3, p. 1020
21. Whitfield: Brit. Jour. Dermat., 1900, xii, 274.
22. Gilchrist: Jour. Cutan. Dis., 1899, xvii, 122.
23. Ribbert: Geschwulstlehre, p. 255.

accumulation leads to an irritative conditon of the cell and proliferation, resulting in daughter cells with the inherent property in a certain stage of development to form pigment again.

In the discussion of the origin of melanin the points at issue are whether it originates in the cutis or epidermis or in both, and whether or not it is derived from the blood. Kölliker[24] believed that it was formed in the cutis and through the leucocytes or connective tissue cells was transported to the epidermis; Jarisch and Post,[25] that it was of epidermic origin and streamed into the cutis direct or was carried there by wandering cells. Ehrmann, [26] Borst, and Neumann were of the opinion that it was derived from the hemoglobin of the blood. Ehrmann[26] attributed to a specific cell in the cutis, the melanoblast, the function of pigment formation, and believed that this cell extended into the epidermis and deposited pigment there. This cell is identical with the chromatophore of Ribbert. The hematogenous origin of melanin, however, is not supported by chemical examination, as it contains sulphur and not iron. Various investigators, among them Martini, found iron only in those portions where hemorrhage had taken place, so that the presence of iron in melanotic areas is generally looked on as a contamination with blood.

Rössle,[27] in studying protozoa under pathologic conditions, found that certain nuclear changes took place —namely, hypertrophy and hyperchromatosis—with discharge of a portion of the nuclear substance into the plasma and its conversion into brown or black pigment. Turning his attention to melanomas, he came to the conclusion that similar changes took place in young cells—namely, an overproduction of nuclear substance with passage into the protoplasm and metamorphosis into pigment. He demonstrated that the chemical reaction in both was the same—namely, iron-free.

Staffel[28] confirmed the studies of Rössle and applied them to various pigmented conditions in the skin. He concludes that in human skin pigmentation is the result of cellular activity, is formed by the epidermic as well as plasma and mast cells, and that the mode of formation is the same in all—i. e., an accumulation of nuclear substance and its conversion into pigment.

In further support of the nucleolar theory are the experiments of Meirowsky.[29] He produced pigmentation with the Finsen light and found that pigment was produced only in the epidermis and not in the cutis. He was able here to follow the same cycle of development as his predecessors had reported—viz., accumulation, discharge and metamorphosis of nucleolar matter. Pigment being a portion of the nucleus, he suggests that this point may help to clear up the question of the inheritance of pigmentation, the nuclei transmitting inherent properties and tendencies to the offspring.

Adami[30] argues that identical nuclear changes having been described in connection with so many cell deposits, each individual cell deposit instead of being a direct development from the plasmasomes or chromidia is due to the interaction between the discharged nuclear matter and certain cytoplasmic substances. He also suggests that instead of being a progressive acquirement, marked pigmentation indicates a deficiency in the disintegrative mechanism of the cell, the normal final stage of colorless chromogen formation not being reached. From the investigations of von Fürth[31] it seems that melanin is developed by the action of intracellular oxidases or enzymes on the aromatic or chromogen group of the protein molecule.

The true factor in the causation of melanomas, as in all tumors, is still unknown, and the extent to which increased vascularity due to irritation or inflammatory changes plays a rôle still undecided. The majority of cases begin after the third decade, chiefly in the fourth and fifth. Bland-Sutton mentions one in a girl of 13. It would seem that melanomas of the foot occur more frequently in women than in men. These tumors appear to have a wider distribution in the lower animal kingdom, where they are not so malignant as in man. They are frequent in horses, and also occur in cows, having the same tendency to metastasis, but with a more benign course.

Among the other pigmented growths of the skin is Kaposi's idiopathic multiple hemorrhagic sarcoma, differing from the melanoma in having a multiple and usually symmetrical origin, a slower course and little tendency to metastasize. Its color is due to blood pigment and not to melanin. As shown in Figure 5, the tumors are situated in the corium, are very vascular, and consist of capillaries and blood spaces lined by endothelium or tumor cells and a connective tissue growth. The blood spaces are very delicate and rupture easily, the hemorrhagic extravasation giving rise to the pigment present in these tumors. Under higher magnification (Fig. 6) the growth is seen to be made up of spindle cells and an intercellular stroma collected into bundles which on section appear in various planes and give rise to an appearance of streaming or radiation from different centers.

I have previously called attention to the fact that single brownish-red tumors are met which present all the histologic features of Kaposi's angiosarcoma, remain localized and show no recurrence after removal. On the other hand, we find tumors originating from the endothelium or perithelium of blood vessels in which the cells are not spindle-shaped as in the Kaposi type, but round or polygonal (Fig. 7), with deep-staining nuclei and a slight intercellular substance between. The large cavernous blood channels are lined by endothelium or tumor cells and, owing to the delicacy of the walls, hemorrhage readily occurs into the tissue.

With the melanoma at one pole of the sarcoma group representing the highest type of malignancy, we have the giant-celled sarcoma or myeloma at the opposite end as the least malignant. It is still a question whether it properly belongs to this group, many pathologists being inclined to place it in a class by itself, for this reason denominating it "giant-celled myeloma" instead of a giant-celled sarcoma. It is made up of tissue similar to the red marrow of young bones and occurs in the medulla and in the periosteum, as in the lower jaw, where it is known as epulis. In the long bones the site of predilection is near the epiphyses, almost always beginning in the medulla and growing out to the periosteum. These tumors may attain the size of a head and undergo cystic softening. The vascular development is very marked, and the hemorrhage may be so great that the tumor regresses and is no longer thought a growth. Such cases have been called "bone aneurisms." These

24. Kölliker: Ztschr. f. wissensch. Zoöl., 1887, xlv.
25. Post: Virchow's Arch. f. path. Anat., 1894, cxxxv, 479.
26. Ehrmann: Monatsh. f. prakt. Dermat., 1907, xliv, 166.
27. Rössle: Ztschr. f. Krebsforsch., 1904, ii, 291.
28. Staffel: Verhandl. d. deutsch. path. Gesellsch., 1908, xi, 136.
29. Meirowsky: Monatsh. f. prakt. Dermat., 1906, xlii, 541; xliii, 155; 1907, xliv, 166.
30. Adami: Principles of Pathology, i, 765.
31. Von Fürth: Centralbl. f. Path., 1904, xv, 617.

tumors are not very malignant; they grow slowly, recur sometimes, but do not as a rule metastasize.

CASE 3.—The case under consideration, kindly referred to me by Dr. Dougal Bissell of this city, had a more unusual location, viz., in the terminal phalanx of the left middle finger. The patient was a woman of 33.

History.—Ten years before examination, the patient had had a chancre of the lip for which she was treated over a period of two and a half years. She was married the first time at twenty, and the second time six years before she came under observation. She had never been pregnant. Eight years before examination she was operated on for tubal disease, a portion of one ovary being left. She had menstruated normally since. Three years before she came under observation she had a "sore" on her elbow. Eight months before she presented herself to me she noticed a swelling of the terminal phalanx of the left middle finger. Later the nail became discolored and tender on pressure. After this a dark red infiltration appeared beneath the nail and projected some distance beyond the tip of the finger. It subsequently ulcerated and was followed by a fungating condition (Fig. 9). On palpation of the terminal phalanx, marked crepitation was evident, probably due to the disintegration of the bone.

On account of the history of syphilis, the patient was treated energetically with antisyphilitic remedies without avail. A biopsy was then made to confirm the clinical diagnosis of myeloma. She was given numerous x-ray exposures, but as they were unproductive of result, she finally yielded to operation. Amputation of the terminal phalanx was made by Dr. Bissell and the tissue sent to me for further examination.

Examination of Specimen.—On section, the entire phalanx showed soft cancellous tissue with a few spicules of bone and a central cavity. Microscopically, (Fig. 8), the typical feature was the giant cell, which has the characteristic structure of myeloplaques. The rest of the tumor was made up of spindle and round cells arranged about the giant cells or blood vessels, which were very numerous in some areas. They varied from small capillaries to large blood spaces and hemorrhage was marked in places. The supporting stroma consisted of an intercellular reticulum of variable amount. The giant cells were more or less grouped, had a finely granular protoplasm and many nuclei, oval or round, situated throughout the cell body. Their number was so great sometimes that they filled the entire cell. Occasionally tumors were found in which the nuclei had a peripheral arrangement as in the Langhans cell.

Owing to the history of lues which this patient gave, it is interesting in this connection to cite the case of syphilitic dactylitis with recurrence after operation reported by Nicolas, Durand and Moutot.[32] The patient was a man with a fusiform tumefaction of the left index finger, which was diagnosed on clinical and histologic examination as a myeloma of the synovial sheath. An operation was performed, but a month afterward the patient returned with a tumor the size of a pigeon's egg, which was then diagnosed as a rapidly infiltrating sarcomatous recurrence. An antecedent history of syphilis, however, and a closer study of the microscopic features of the case, suggested to one of the authors its possible luetic nature. The patient was accordingly most energetically treated on this supposition with injections and iodids and in four weeks was well.

Tertiary lesions of syphilis present under the microscope such a variety of phases that they may simulate a vast number of pathologic conditions. Giant cells conforming more or less to the myeloid type are often present in great numbers, but they do not possess so many nuclei, and on closer examination their vascular relationship can usually be established. I believe that the majority, if not all, giant cells in syphilis are the result of endothelial proliferation and vascular occlusion. As other differential points may be mentioned the endarteritis and periarteritis of the vessels in lues, and also that the spindle cells with the reticulum met with in myeloma are not a feature of syphilis.

80 West Fortieth Street.

32. Nicolas, Durand and Moutot: Ann. de dermat. et de syph., 1908, Series 4, ix, 208.

ABSTRACT OF DISCUSSION

DR. D. W. MONTGOMERY, San Francisco: In my opinion Dr. Fordyce has acted wisely in speaking of the melanomas as sarcomas, without further comment; for although some of the melanomata look like epitheliomata because of their highly developed alveolar structure, yet they are, almost without exception, sarcomas. A pigmented epithelioma is a very rare form of tumor.

DR. JAY F. SCHAMBERG, Philadelphia: One of the photomicrographs shown by Dr. Fordyce recalls to me a picture in my possession which appeared some time ago in the *Journal of Cutaneous Diseases*, and which represented an epithelioma developing on a papillary nevus on the forehead of a young man which had been injured by an umbrella ferule. The nevus had been present since birth and only underwent malignant change subsequent to the injury. The growth appeared to have its origin from an off-shoot of the hair follicle so that it probably belongs to the type of epithelioma designated trichoepithelioma. Large masses of epithelial cells were seen proliferating in the lymph spaces.

DR. M. B. HARTZELL, Philadelphia: We have learned in recent years that many of the cases of malignant neoplasms formerly called alveolar pigmented sarcoma are not sarcomata at all, but pigmented epitheliomata; and it seems to me that we ought to be somewhat cautious about accepting as sarcoma some of these lesions of the skin showing a pigmented alveolar structure. Most of these are epitheliomata.

DR. WILLIAM S. GOTTHEIL, New York City: I have had two of these cases of pigmented sarcoma and in both of them, in spite of early and repeated operations, general sarcomatosis of the skin and internal organs led to a fatal issue, in one case within six months; in the other within nine months.

DR. J. A. FORDYCE, New York: I intended to use the term melanoma as a non-committal one, including melanosarcoma and melanoepithelioma. I think it is yet undecided where these tumors originate. I do not believe that the view expressed by Dr. Hartzell that many of them are melanoepitheliomata is accepted by leading pathologists. The view is commonly held that these growths originate from the chromatophores, presumably connective tissue cells, and not from the epithelial cells. Unna's contention that they are melanoepitheliomata is now losing ground, and the view is being held that they originate in this special tissue. In one case, a tumor of this kind existed on the foot for a number of years without giving rise to metastases, although as a rule these growths metastasize early and are rapidly fatal.

THE ROLE OF ANIMAL EXPERIMENTATION IN THE DIAGNOSIS OF DISEASE *

"The humanity which would prevent human suffering is a deeper and truer humanity than the humanity which would save pain or death to animals."—*Charles W. Eliot.*

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We must recognize a disease before we can hope to prevent or cure it. The diagnosis is, therefore, of fundamental importance; indeed, on correct diagnosis rests the entire structure of preventive and curative medicine. The power of recognizing a large number of diseases with unerring certainty has raised medicine from a de-

* This is Pamphlet III in a series issued for public information by the Council on Defense of Medical Research, referred to editorially last week. See advertisement in this issue.

spised empiric art to an exact science, the leaders of which rank with the most distinguished men of any calling in the esteem and gratitude of mankind.

The importance of diagnosis holds true for every branch of human endeavor. The judge and jury must have a correct diagnosis of a case at law to judge correctly the facts. The reformer must diagnose evils before he can hope to correct them. The bridge-builder must recognize the cause of weakness in order to correct or prevent faulty construction. Deprived of the power of correct diagnosis, the physician of to-day would have no more mastery over disease than the primitive medicine-man, and his patients would suffer accordingly. Without the means of correct diagnosis, the sanitary sciences would revert to guesswork and chaos. The prevention or suppression of tuberculosis, malaria, plague, typhoid fever, diphtheria and other communicable diseases would be a hopeless task without modern methods of diagnosis. These methods play an equally important part in the exclusion of exotic plagues at our maritime quarantines.

It is perhaps not generally understood that we depend largely on animal experimentation in order to make a positive diagnosis of many of the important diseases of both man and the lower animals. To illustrate the extent to which modern medicine is dependent on animal experimentation for diagnosis, the following instances are cited:

TUBERCULOSIS

The final recognition of the tubercle bacillus, which is our main reliance in diagnosing this disease, depends entirely on animal experimentation. In fact, Trudeau well states that "everything that has a direct bearing on the prevention of tuberculosis, everything that has changed mankind's attitude toward it from one of apathy and hopelessness when the infectious agent which produces tuberculosis was unknown, and the disease was thought to be inherited and always fatal, to the growing hope of its ultimate conquest . . . we owe to animal experimentation."

The essential difference between the bovine and the human tubercle bacillus is one of experimental virulence as tested on the lower animals. Further, there are many bacteria that cannot be distinguished from the tubercle bacillus when examined under the microscope or in artificial cultures, and we must resort to animal experimentation to gain the knowledge we seek. In many cases we are unable to find tubercle bacilli in the sputum on account of their scarcity, while the same material inoculated into a guinea-pig demonstrates their presence with absolute certainty. The sacrifice of this one guinea-pig will often save a human life by giving early recognition of the disease. Successful treatment is often hopeless without early diagnosis. What reasonable being would not thus sacrifice a guinea-pig to save the life of a loved one? Experimental tuberculosis in the guinea-pig is apparently a painless malady and the animal is usually killed with chloroform before the disease has progressed very far, both to gain an early knowledge of the desired facts and to prevent needless suffering on the part of the animal.

We must depend on animal inoculations in order to distinguish between a live and a dead tubercle bacillus. This is a matter of the greatest practical importance, for all our exact knowledge of the efficiency of heat and other germicidal agents used in the warfare against tuberculosis depends on this distinction. These facts are obviously useful in protecting mankind from whatever danger there may be from tuberculous infection in milk, meat and other foodstuffs. Further, this knowledge is also of prime importance in order that we may know when and how to destroy tubercle bacilli in sputum and other discharges so as to prevent the spread of the infection. In the present state of our knowledge, this information can be gained through animal experimentation only.

TYPHOID FEVER

The ultimate recognition of the typhoid bacillus depends on the use of the specific agglutinins. The specific agglutinins may be produced in the blood-serum of certain animals. These specific agglutinins are usually obtained from the horse or the rabbit. The animals are inoculated with small quantities of cultures of the typhoid bacillus, to which they are not very susceptible and which do not seem to discommode them. After a few injections, at intervals of four to eight days, the blood-serum of the horse or rabbit exhibits the desired property of clumping or agglutinating the typhoid bacillus. This property is specific and definite, and is depended on in all careful work in the diagnosis of typhoid fever. Laboratories now use large quantities of such serum to detect the presence of the typhoid bacillus in the feces, urine or blood of persons sick with typhoid fever or suspected of having it in a clinically unrecognizable form. This serum is also indispensable in the detection of bacillus-carriers, who are such a menace to the public health.

Other laboratory tests or clinical methods not depending on animal inoculations are useful in the diagnosis of typhoid fever, but they are not satisfactory, accurate or final. The only positive method of recognizing typhoid fever depends on the isolation of the typhoid bacillus in pure culture; and this determination rests on animal experimentation.

CHOLERA

The cholera story is a repetition of that of typhoid. A cholera "vibrio" may be curved, straight, spiral or round; it may liquefy gelatin or not, may produce cholera red (indol) or not, etc.; but a micro-organism is cholera only in the event that it responds to the specific agglutinin obtained through animal experimentation. Bacillus-carrying is common in cholera. Mild cases are impossible to recognize clinically. A single bacillus-carrier or a single mild case may be sufficient to infect the water-supply of an entire community. At Hamburg, in 1892, the river Elbe was infected from a few unrecognizable cases (perhaps one case) of cholera. Nearly 17,000 persons who drank this infected water contracted the disease and slightly more than half died in the short period from August 17 to October 3.

Cholera introduced from abroad has devastated our own country more than once. That it has been kept out successfully of late years is due entirely to modern preventive measures, in which diagnosis through animal experimentation is an important feature.

The quarantine officer at a seaport must have the specific serum in order to recognize a mild case or a bacillus-carrier. For the want of a few drops of such agglutinating serum a serious epidemic may result, and the commerce and industry of an entire nation be disturbed.

RABIES OR HYDROPHOBIA

This is an acute, fatal and communicable disease. The diagnosis of rabies may be made tentatively by the finding of Negri bodies in the central nervous tissue and other pathologic changes; but the more experienced one becomes in the diagnosis of this disease the more reliance

one places on animal experimentation. All advances that have been made in the subject of rabies have depended on animal experimentation. It may interest the zoophilists to know that the sacrifice of a few dogs and rabbits in the study and prevention of rabies has been the means of saving the lives of many times their number of dogs, horses, cattle and other animals from this disease.

PLAGUE

The plague bacillus has certain cultural morphologic characteristics, such as a stalactite growth on bouillon, bipolar staining, and involution forms on salt agar; but this organism, which is the cause of the great black death, cannot be recognized with certainty except through animal experimentation. Kolle's method consists in rubbing a little of the suspected material on a shaved patch of skin (about the size of a dime) of a guinea-pig. If plague bacilli are present and virulent the animal contracts the disease in a few days. This method of diagnosing the disease is the foundation on which the preventive measures were carried out in California in the recent successful plague campaign. Animal experimentation is indispensable in the recognition of this disease as it occurs in man, the rats, the squirrel and other animals.

It was entirely through animal experimentation that sanitarians were given the useful knowledge that plague is transmitted from rat to rat and from rat to man through the agency of the flea. With the ability to diagnose the disease with certainty and with a correct knowledge of the channels of infection, suppressive and preventive measures may now be carried out with every assurance of success.

DIPHTHERIA AND TETANUS

The diagnosis of these two diseases may be made tentatively without the use of animal experimentation, but in this, as in many other such instances, appearances are deceiving and we must resort to tests on the lower animals in order to be sure of our diagnosis. The diphtheria and tetanus toxins cannot be recognized except by their effects on animals, and the same is true of the antitoxins. There is a whole group of organisms that look like and grow like the diphtheria bacillus, and are known as "pseudodiphtheria" bacilli. The shape and growth of the tetanus bacillus also is not distinctive enough to be final. We must, therefore, resort to animal experimentation in order to establish the identity of these organisms and the diseases which they produce.

SEPTICEMIA AND PYEMIA

The diagnosis of these conditions, which are commonly known as blood-poisoning, frequently requires animal experimentation. Our knowledge of these conditions, on which is based aseptic surgery and the modern treatment of wound infections, has resulted in large measure from experiments made on animals.

It is not possible in a few pages to specify all the instances in which animal experimentation serves a useful purpose in the recognition of disease; but in addition to the foregoing it plays a more or less important part in the diagnosis and prevention of pneumonia, dysentery, Malta fever, anthrax, glanders, actinomycosis, and a large class of maladies due to microparasites.

Further, it must be plain to anyone who gives the matter careful consideration that animal experimentation has not only been potent in preventing much suffering and saving many a human life, but it has been even more active in the realm of the lower animals. A more exact knowledge of the causes and channels of infection and the methods of diagnosis of the communicable diseases of the lower animals has resulted in intelligent and humane efforts to conserve the health and comfort of our live stock. A full exposition of this subject is presented elsewhere, and mention is here made of only such epizootics as glanders or farcy, symptomatic anthrax or black leg, actinomycosis or lumpy jaw, anthrax or splenic fever, tetanus, swine plague, chicken cholera, hog cholera, Texas fever and foot and-mouth disease.

Kipling says:

> The doctor is exposed to the criticism of persons who consider their own undisciplined emotions more important than mankind's most bitter agonies; who would cripple and limit research for fear research might be accompanied by a little pain or suffering. But if the doctor has the time to study the history of his own profession he will find that such persons have always been against him—ever since the Egyptians erected statues to cats and dogs on the banks of the Nile.

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THE SIGNIFICANCE OF EHRLICH'S ALDEHYD REACTION IN THE URINE*

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About eight years ago Ehrlich first noticed that normal urine gave a faintly reddish coloration when treated with a muriatic acid solution of paradimethyl amino benzaldehyd; and that this coloration was remarkably intensified in certain pathologic conditions. To Otto Neubauer[1] is due the credit of having isolated the particular chemical substances causing the reaction, proving that it was caused by pyrrol derivatives present as urobilinogen substances, the product of the metabolism of blood pigments; and, reasoning inversely, he came to the conclusion that the blood pigments themselves were derived from pyrrol derivatives rather than indol substances, as upheld by Nenki. He, furthermore, contended that these urobilinogen substances, mother substances from which the urobilin was formed, were present in increased amounts when there was an increased breaking down of blood pigments, especially in malaria, lead colic, lobar pneumonia, lung infarct, venous thrombosis, liver diseases and some infectious conditions.

The object of the present investigation was to determine the clinical value of the reaction, since it is so readily and easily carried out. Undoubtedly the determination of the urobilin in the urine would be more satisfactory, as recently contended by Hildebrandt,[2] since by his method of treating the urine with zinc acetate all urobilinogen substances are converted into urobilin, so that both substances are determined at once, whereas the aldehyd reagent shows only the presence of urobilinogen, its action on urobilin causing no change in color. The present investigation was begun some nine months ago, since which time the work of Conner and Roper[3] and Hildebrandt[2] has appeared. My

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* From the laboratory of the Cincinnati Hospital.
* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

1. Neubauer, Otto: Sitzungsb. d. Gesellsch. f. Morphol. u. Physiol. in München., 1903, No. 2, xix, 32.
2. Hildebrandt: München. med. Wchnschr., April 6, 1909, p. 710.
3. Conner, L. A., and Roper, J. C.: Arch. Int. Med., Jan. 15, 1909, ii, 532.

observations so clearly verify many of the observations and predictions of the former writers that their publication seems necessary.

The question of the origin of the urobilinogen and urobilin naturally is brought up, and the various theories for the production of the same called to mind, namely, the enterogenous, hepatogenous, hematogenous, histogenous and renal theories, recently so well summed up by the writers referred to. At the outset it may be stated that my observations would tend to support the enterohepatogenous theory, namely, that under normal conditions the reduction of the biliary pigments into urobilinogen and urobilin takes place in the intestines, in accordance with the views long since expressed by F. Müller and Otto Neubauer, and that a pathologic urobilinuria or urobilinogenuria results when the liver is insufficient; that is, when it is unable to excrete an increased amount of urobilinogen or urobilin when absorbed from the intestines, or when, through disturbances in the liver itself, it is unable to excrete a normal or even deficient amount of these substances. In infections of the liver evidence would point to the fact that these substances may be locally formed in the liver itself. Although the histogenous theory can not be discarded, it would seem that the chief organs concerned ordinarily are the intestines and the liver.

CLINICAL APPLICATION

The reagent used was prepared as follows:

Twenty grams of paradimethyl-amino-benzaldehyd were dissolved in 1,000 c.c. of dilute muriatic acid, made by diluting 150 c.c. of the chemically pure acid to 1 liter with distilled water. To about 5 c.c. of cold urine taken soon after being voided, because long standing causes a conversion of the urobilinogen into urobilin through the action of air and sunlight, 5 to 10 drops of the reagent were added. The mixture was shaken and allowed to stand a minute or two. Normal urine gave a varying coloration, which was intensified to a distinct cherry-red color on heating, usually associated with a peculiar pungent odor. Neubauer asserts that the urobilinogen represents various substances, ranging in structure from $C_8H_{13}N$ (hemopyrrol) to $C_{32}H_{40}N_4O_7$ (urobilin itself) and that the more sensitive give the reaction in the cold, the less sensitive only on heating. When the reaction is distinctly scarlet in the cold, a pathologic condition of the urine is present. Experiment soon showed that the intensity of the reaction varied, even in the normal urine, and the following scheme of recording results was adopted:

A negative result, i. e., maintenance of the original color of the urine, or a yellowish coloration after adding the reagent was reported as —O; a faint reddish color only obtained on looking through the whole columns of urine in the test-tube from above, as + 1; when the mixture presented a pinkish or faintly reddish hue, on looking at it from in front, as + 2; when a distinctly scarlet coloration was obtained, it was recorded as + 3; which intensity of reaction alone is of any pathologic significance.

Examination of my own urine through a period of twenty-five days showed that the reaction varied from one day to the other, but that it never assumed a + 3 reaction in the cold, but always on heating. From this it was assumed that an apparently normal individual with a properly functionating liver was able to preserve a urobilinogen balance; that is, the liver was able to excrete these substances derived from the intestines, only allowing a trace to appear in the urine. It may be possible that in cases of severe constipation, or so-called torpid liver, even in an apparently normal individual, the reaction might approach + 3 in intensity, but if this condition persists following free purgation, undoubtedly a pathologic condition is at hand.

The reaction was next applied to the urine of a series of nearly 200 cases taken from all wards of the City Hospital; the tables show the distinct degree of reaction obtained in many of these cases. First, as to the color of the urine: This was recorded in a total number of 107 cases. Of the 74 light-colored urines examined:

13 (17.5 per cent.) reacted + 3
9 (12.4 per cent.) reacted + 2
10 (13.5 per cent.) reacted + 1
42 (56.6 per cent.) reacted — 0

Of the 33 cases of dark-colored urine examined:

13 (39.4 per cent.) reacted + 3
5 (15.1 per cent.) reacted + 2
2 (6.1 per cent.) reacted + 1
13 (39.4 per cent.) reacted — 0

This shows conclusively that the positive reaction was more commonly found in dark-colored urines, 21.9 per cent. more than in light-colored urines, but that it also occurred quite frequently in the latter. In the dark-colored urines a negative reaction was correspondingly less frequent—17.2 per cent. less. On the whole, then, the reaction is independent of the color of the urine, being more common, however, in dark-colored urines.

TABLE SHOWING DEGREE OF REACTION IN ABOUT ONE HUNDRED AND FIFTY HOSPITAL CASES

Clinical Diagnosis.	No. Cases.	Reaction +3	+2	+1	—0
Acute lobar pneumonia	17	7	2	1	6
Malaria	2	2	.	.	.
Scarlet fever	5	.	.	.	5
Acute articular rheumatism	12	5	.	2	5
Typhoid fever	10	1	3	1	5
Influenza	5	2	.	1	2
Erysipelas	2	.	.	.	2
Simple pulmonary tuberculosis	5	.	1	1	3
Complicated pulmonary tuberculosis	2	2	.	.	.
Appendicitis	3	.	.	2	1
Pelvic cellulitis	2	.	2	.	.
Tonsilitis	2	.	1	.	1
Pus tubes	4	.	.	1	3
Endometritis	1	.	.	.	1
Cystitis	2	.	.	1	1
Cirrhosis of liver	2	1	.	.	1
Carcinoma of liver	1	1	.	.	.
Miliary abscess of liver	1	1	.	.	.
Catarrhal jaundice	4	2	.	.	2
Myocardial insufficiency + edema	8	5	2	.	1
Pleurisy with effusion	5	4	.	.	1
Pericarditis + diaph. pleurisy	2	.	.	.	2
Pleurisy dry adhesive	3	.	2	.	1
Acute nephritis	5	1	.	2	2
Uremia	1	1	.	.	.
Chronic nephritis	5	.	.	.	5
Abortion	3	.	.	.	3
Shot wound of chest	1	.	.	1	.
Shot wound of abdomen	1	.	.	.	1
Shot wound of kidney	1	.	.	1	.
Ruptured abdominal aneurism	1	.	.	.	1
Fracture femur	1	.	.	1	.
Hemorrhoids	2	.	.	.	2
Venous thrombosis	1	.	.	.	1
Syphilis	2	.	.	.	2
Lead colic	1	.	.	1	.
Trichiniasis	2	.	.	1	1
Diabetes mellitus	5	.	1	.	4
Chronic alcoholism	2	.	.	.	2
Carbolic acid poisoning	1	.	.	1	.
Diabetes insipidus	2	.	.	.	2
Burn cases	4	.	.	.	4
Morphinism	3	1	.	.	2
Senile dementia	1	.	.	.	1
Dementia paralytica	1	.	1	.	.
Neurasthenia	2	.	.	.	2
Melancholia	1	.	.	1	.
Acute gastritis	1	.	1	.	.
Acute bronchitis	4	1	.	.	3

To sum up: The reaction is most commonly obtained in diseases of the liver, myocardial insufficiency with edema, pleurisy with effusion, and acute catarrhal jaundice, all conditions in which the proper elimination of the urobilinogen through the liver after absorp-

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tion from the intestines is interfered with; furthermore, in some infectious conditions, as lobar pneumonia, malaria and articular rheumatism. An absence of a pathologic reaction has been conspicuous in more or less localized septic states, as pelvic abscess, pus tubes, tonsillitis, simple pulmonary tuberculosis, acute bronchitis, erysipelas, dry pleurisy and pericarditis, despite the increased temperature.

In this series of cases the absence of the reaction in typhoid fever and scarlet fever is to be noticed. In localized extravasations of blood following shot wounds, or rupture of aneurism, no increase in the intensity of the reaction is to be noticed. Convalescence from a condition in which the reaction was marked was followed by a return to the normal; thus, in both cases of malaria, the quick response to quinin treatment was followed by a disappearance of the reaction. In incipient cases of disturbed myocardial insufficiency, and in suspected cases of gallstone trouble with a clear history and response to treatment, the reaction was not present. Undoubtedly a positive reaction which persists, in these cases, would indicate a marked disturbance, either in the production of the urobilinogen in the small intestines plus increased absorption or a disturbance in the eliminating power of the liver. It must be borne in mind that one section of the liver may be involved and yet the remainder may be efficient, as was demonstrated in one severe case of syphilitic cirrhosis of the liver in which the reaction was negative, though a diminished formation in the intestines may have been present. The reaction is not a constant one, even in those conditions most commonly the cause. That a positive reaction may be of some assistance in suspecting liver involvement was shown in a case of miliary abscess of the liver following infectious thrombophlebitis.

CASE 1.—The patient, a young man, first showed symptoms of appendicitis; later localized peritonitis developed, at which time the reaction was + 2 in intensity. These symptoms subsided, but later increased temperature plus tenderness over the gall bladder made the attending physicians suspect gall bladder or liver involvement. The urine showed a positive aldehyd reaction in cold, and the presence of leucin and tyrosin in the urine. Operation was resorted to for suspected cholecystitis. At operation the gall bladder was apparently normal and cultures taken proved negative. The patient collapsed suddenly on the table.

Autopsy.—This revealed an enlarged liver, studded throughout with miliary abscesses along the portal tract evidently, and an infectious thrombophlebitis. Cultures from the portal vein and abscess areas both showed the presence of diplococci and a colon-like organism, evidently the result of infection following absorption from the originally involved appendix.

Clinically this case beautifully demonstrates what Fischler[4] showed experimentally on animals, namely, that under certain conditions urobilin can be formed in the liver itself. He made biliary fistulas in dogs draining the bile to the outside, and then injected amyl alcohol and phosphorus into the gall bladder. The liver became involved, and urobilin again appeared in the urine; with the subsidence of the condition, it again disappeared. In my case the liver itself became involved through infection along the portal tract.

EXPERIMENTAL DATA

Since Muller reported the interesting fact that when the common bile duct becomes occluded the urobilin disappears from the urine, the German school has adhered to the enterogenous theory as to the origin of the urobilin, namely, that when the bile is poured into the intestines and is subjected to the action of the reducing bacteria, urobilin is formed and absorbed from the intestines; it is again excreted through the bile and, to some extent, through the urine. Bile usually contains some urobilin. Neubauer[1] later asserted that occlusion of the common duct would also be followed by absence of the urobilinogen in the urine, bile and intestines, and that this might be shown by a negative aldehyd reaction in the urine, both in the heat and cold. Kimura[5] showed that normal bile always contained urobilinogen, using the aldehyd reaction and the spectroscope to detect the absorption band.

With the object of verifying this fact through animal experiment the following investigations were made: It was found that normal rabbit urine reacted toward the aldehyd reagent exactly as does the normal human urine. Rabbits were therefore used, and each experiment conducted under ether anesthesia. Ether was given in minimal amounts, and never exceeded 30 minutes. In two instances the animals died within a few hours following the operation, but no changes beyond the normal were found in the urine.

EXPERIMENT 1.—Male rabbit. The common bile duct was ligated with silk and the operation wound closed. The animal died eighteen hours after operation.

Urinalysis.—Urine before operation, negative in the cold, + 3 on heating. After operating the urine taken from the bladder soon after death was reddish. Aldehyd reagent caused a negative reaction in the cold, the reddish color of the original urine soon disappearing on adding the reagent. On heating a brownish precipitate formed, but no scarlet color developed. The cold urine was then heated, filtered, and the reagent added after cooling. Reaction was + 1, on heating no increase in the intensity of the reaction. The urine, drawn before operation and preserved on ice in the dark, when added to the catheterized specimen immediately caused a scarlet coloration on heating with the reagent.

Autopsy.—This, made about twelve hours after death, showed abdominal wound perfect, no escape of bile, liver enlarged, congested, apparently bile-stained. Common duct ligated, severe congestion from this point upward. The aldehyd reaction negative in the heat and cold, but not confirmed by spectroscope examination. Kidneys both showed an acutely congested appearance.

EXPERIMENT 2.—Male rabbit; common duct ligated and operation wound closed. The animal died thirty-six hours after operation.

Urinalysis.—Urine after operation showed a negative reaction in the cold, and + 1 on heating. Addition of the urine obtained on the previous day before operation caused intense reddish coloration on heating with the reagent.

Autopsy.—Thoracic organs normal. Abdomen showed an early localized peritonitis, immediately below the operating wound. Liver was bile-colored, gall-bladder dilated.

These experiments both show that occlusion of the common duct is early manifested by a decided alteration in the normal reaction. On heating with the reagent only the faintest trace of a reddish color was noticed. On adding the normal urine, however, the color immediately became scarlet, showing conclusively that the urobilinogen had practically been eliminated; in reality none had been formed, because the action of the reducing bacteria in the intestines had been excluded. The fact that the reaction on heating was still recorded as + 1 would show that, as late as thirty-six hours after the second experiment, there was still a slight trace of urobilinogen present, which no doubt was due to residual urobilinogen in the tissues, this time interval not being sufficient to cause complete elimination from

4. Fischler: Das Urobilin u. seine klinische Bedeutung, Thesis, Heidelberg, 1906.

5. Kimura, T.: Deutsch. Arch. f. klin. Med., 1904, lxxix, 274.

the system. Several experiments were made of infecting the gall bladder above the point of constriction, in order to observe, if possible, the reoccurrence of the scarlet color, due to changes in the liver through bacterial action. No results were obtained, however.

Complete occlusion of the common bile duct is therefore followed by a negative reaction, both in the cold and in the heat, after adding the aldehyd reagent to the urine. There immediately occurs to one the possibility of using this fact as a means of diagnosis in cases of total obstruction of the duct through a stone, through inflammatory changes in the mucosa, or by compression from without through any source. Are these the only conditions which can cause this change in the reaction? Kimura[5] has shown that in severe diarrheas a similar condition is obtained, owing to the fact probably that no bile can be reduced in the intestines under such a condition, or absorption becomes impossible. We must further conceive of the possibility of a patent ductus venosus, allowing of the discharge of bilirubin into the intestines, although occlusion of the duct be present. In the newly born the same condition is obtained, because bacterial reduction has not as yet begun.

In my list of clinical cases two other conditions were encountered, which gave a similar result.

CASE 2.—Infant, female, aged 17 months, died eight days after acute phosphorus poisoning caused by eating matches. The urine examined before death had unfortunately been standing from thirty to thirty-six hours before the aldehyd reaction was tried. It was, however, found negative both in the heat and the cold. Tyrosin was also found in the urine.

Autopsy.—Made about four hours after death; showed a somewhat enlarged liver, distinctly fatty. Heart showed beginning endocarditis. Intestines were somewhat congested. Microscopic examination of the liver showed distinct fatty changes and round-celled infiltration about the vessels; the liver cells were poorly stained and fat globules numerous. The urine obtained at autopsy showed a negative aldehyd reaction both in the heat and the cold.

CASE 3.—Clinical diagnosis, transverse myelitis. An operation had been performed to relieve any supposed compression of the cord about at a level with the fifth dorsal vertebra, since a distinct traumatic history was given. No relief followed. Immediate operation, however, was successful from a technical standpoint. The patient sank rapidly from incontinence of both urine and feces, and at last refused to eat, so that exhaustion ultimately resulted in death. For several days previous to death profuse hemorrhages occurred from the lower bowel.

Autopsy.—There was found an extremely fatty liver, chronic interstitial nephritis, and hemorrhagic condition of the lower colon. The urine obtained at this time likewise showed a negative reaction in the heat and cold.

In both these cases it may be argued that postmortem changes in the urine caused these variations in the aldehyd reaction from the normal. Among numerous cases examined after death, however, these two cases were the only ones which presented such a condition. Hildbrandt believes that in severe phosphorus poisoning the general destruction of the liver would lead to such findings. He has no direct evidence to support his views, however. Case 2 was undoubtedly one of acute phosphorus poisoning, and tyrosin was found in the urine; bile could not be detected by the nitric acid or iodin tests. Before death, however, the stools were very frequent, quite pale, and grayish in color. To what extent the profuse diarrhea was instrumental in causing the negative urobilinogen reaction can not be definitely told. Likewise, in Case 3, frequent diarrheic stools were present before death, and in addition a severe hemorrhage from the bowel on repeated occasions. In both cases, however, the liver showed marked fatty degeneration, which would tend to support the views of Hildebrandt. In the future severe anemias may be shown to react in a similar way, because of the lessened destruction of blood pigment in late stages.

In phosphorus poisoning the variety, whether acute or chronic, must also be taken into consideration. Harnack[6] has recently shown experimentally that in acute cases following injection of phosphorus into the stomach rapid degeneration and fatty changes are produced in the liver. In more chronic cases, as when subcutaneous injections of phosphorus in oil are given, the degenerative changes in the liver are still present, but not so intense as in the more acute cases, inflammatory reactions on the part of the liver being more common. Therefore, it may be possible that in chronic phosphorus poisoning the destruction to the liver substance may not be so intense as to lead to a total absence of urobilinogen in the urine, as indicated by a negative aldehyd reaction in the heat and cold.

The animal experiment was again called into play, to shed, if possible, some light on this subject.

EXPERIMENT 3.—A male rabbit was given phosphorus in oil mixed with the food. About six hours later it began to show signs of being ill, and died some time during the night.

Urinalysis.—Before operation, at which time the bladder was emptied, the urine showed a negative reaction in the cold, and a positive reaction on heating. The urine, withdrawn from the bladder some time after death, showed a similar reaction.

Autopsy.—Stomach full of food, phosphorus fumes still escaping. The most dependent part of the organ showed an escharotic-like condition of the mucosa. The liver was not particularly enlarged, was distinctly mottled on section, but did not present a fatty appearance. Microscopically the liver showed distinct cloudy swelling of the cells, round-celled infiltration about the vessels, and engorgement of the capillaries. No fatty globules could be detected. The kidneys were enlarged and had a congested appearance.

The above experiment did not result in such marked fatty changes as to lead to a complete obliteration of the urobilinogen in the urine. It is possible that the death occurred too rapidly for such changes to be caused, and that a more gradually induced toxemia would have produced the desired result. To establish this point a second animal was used for experiment.

EXPERIMENT 4.—A male rabbit was given phosphorus in oil per mouth. On the three succeeding days the urine was normal in reaction, i. e., negative in the cold and positive on heating. On the fourth day more phosphorus was fed. On the day following the reaction was + 3 in the cold, distinctly positive. This persisted for five days, when more phosphorus was given per mouth. On the following day the reaction was negative in the cold, and a brownish coloration only developed on heating. Twenty-four hours later the reaction was negative in the heat and cold. The animal now showed signs of considerable weakness and suffering, and was killed by chloroform anesthesia.

Autopsy.—The liver was somewhat contracted, pale yellow, with a mottled appearance on section. The liver was still firm. Microscopically there was almost total obliteration of the liver cells; those remaining were pale with poorly stained nuclei. Numerous fat molecules were distributed throughout. There was round-celled infiltration about the vessels, and seemingly a beginning formation of connective tissue. The stomach was full of undigested food. The small intestines were nearly empty, the large intestines packed with ordinarily formed stools. The bile was thin, light greenish in color, and showed a negative aldehyd reaction in the cold and in the heat.

In this instance the destruction of the liver substance had been so great that no bilirubin was offered to the intestines for reduction. All stages of the reaction were also beautifully demonstrated, varying from

6. Harnack, E.: München. med. Wchnschr., March 2, 1909, p. 436.

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the normal to a relatively and at last an absolutely deficient liver as indicated on successive days by the changes in the aldehyd reaction.

CONCLUSIONS

The clinical value of the aldehyd reaction obtained by adding the reagent to cold, freshly passed urine, and then noticing the changes in the color, at first in the cold and then on heating, is manifest, though limited at times.

The color reaction in the cold is of pathologic significance only when a distinct scarlet color is obtained.

When the reaction persists following free purgation a pathologic condition is at hand.

The reaction is most commonly present in diseases of the liver and bile passages, severe grades of myocardial insufficiency, and certain infectious conditions, as lobar pneumonia and malaria.

The reaction is not a constant one, even in apparently severe grades of the above conditions, presumably because the liver is still efficient in excreting any normal or increased amount of urobilinogen offered it.

Localized infections are more seldom accompanied by this reaction, and when it does persist in such conditions the condition of the intestines and liver should be taken into consideration.

In early grades of myocardial insufficiency of gallstone trouble, and of liver disturbances the reaction is often a negative one. The appearance of the reaction in such cases previously negative would arouse suspicions of disturbances in the hepatic function; inversely, the disappearance of a reaction previously positive would indicate improvement.

The positive reaction is not constant in localized extravasations of blood into the tissues.

When the reaction is positive some care must be exercised in the selection of an anesthetic for operations, since it is well known that chloroform, for instance, can be a direct liver poison.

The absence of the reaction, both in the heat and in the cold, would indicate obstruction in the flow of bile into the intestines.

This condition is also obtained in cases of severe diarrhea, in the newly born, and in severe grades of destruction of the liver substance.

In conclusion I wish to express my indebtedness to the medical and surgical staff officers of the city hospital for their kind permission in allowing me to use the material at hand, to the internes—more particularly Drs. Light, Schlanser, Monroe and Mussey—also to Dr. A. E. Osmond, without whose kind assistance and skill much of the experimental work would have been impossible.

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CRATÆGUS OXYACANTHA *

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Two years ago my attention was called to this agent and since then I have used it rather extensively in order that I might satisfy myself if it had the therapeutic value claimed for it by the sectarian schools. It has been in use by the homeopathic and eclectic schools for some years, but the mass of therapeutic legends surrounding it has deterred physicians of a scientific turn of mind from believing that it was likely to have any efficacy. Originally it was the secret of a quack in the south of Ireland, who by its use is said to have achieved an extensive reputation for the treatment of heart disorders throughout the British Isles. On his death he bequeathed the secret of his successful practice to his niece (if we can believe the romantic story told). She, in a true womanly spirit, could not or possibly would not keep a secret and thus made it known to medical science.

There are only two articles concerning this agent in the regular medical literature. One, Dr. Jennings[1] of Chicago, in 1896 found it such a cure-all for all cardiac complaints that the profession must have judged it to be good for none. Two years later Dr. Joseph Clement[2] extolled *Cratægus oxyacantha* as a sovereign remedy for angina pectoris; the article attracted no comment. In the homeopathic literature there are a number of small articles in the main grossly exaggerating its virtues and consequently of little scientific value. The homeopathic physicians use it for its drug (physiologic) effect just as they would use digitalis or quinin and not according to their so-called provings, in homeopathic doses.

For that reason the dosage in their literature is somewhat like ours. The eclectic physicians employ it quite extensively and it has been kept prominent largely through their efforts and through the work of the pharmaceutic houses of that school.

It is derived from the ripe fruit of the hawthorn (*Cratægus oxyacantha*). These berries are eaten by some people as a fruit. They must be gathered after the first frost. By some pharmaceutical houses the American species (*Cratægus coccinea*) is used and is thought by some observers to be quite as efficient as the *oxyacantha*. Concerning this the eclectics disagree. A reliable fluidextract or tincture is the best preparation. It has a fruity odor with a rather pleasant taste, is seldom rejected by the stomach, and so far as observed has no cumulative effect. Thus far the active principle has not been isolated, nor have its physiologic properties been determined by animal experimentation.

Some work of this kind is now under way at the physiologic laboratory of Fordham University and will be reported on at a later period. Thus far my own experience with it has been entirely clinical in character and has seemed to warrant its use in some of the cardiac neuroses.

The following cases are illustrative of a type sometimes benefited by this agent:

CASE 1.—*Patient.*—Mrs. M., aged 33, quintipara, negative family history, for the past eight years has had hay-asthma. During the last four years she has been having frequent attacks of pain and distress in the cardiac region. In these attacks the patient thinks that she is going to die. At times they are associated with syncope; sometimes they are continuous for weeks. Physical examination during the attack is negative except for a slight lateral enlargement of cardiac dulness and a pulse of 90. There are no evidences of exophthalmic goiter. These attacks bear no relation to disorders of the gastrointestinal tract.

Treatment.—All sorts of cardiac tonics and stimulants seem to increase the trouble. Bromids quiet the nervous system and lessen the apprehension but do not affect the cardiac disturbance. The addition of cratægus in 20-minim doses gave the first complete relief in four years. The relief has been permanent as far as the attack was concerned, and whenever the

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Jennings: New York Med. Jour., Jan. 14, 1906.
2. Clement, J.: Kansas City Med. Recorder, April 7, 1898.

patient feels the oncoming attack she resorts to its use again, and always with success.

CASE 2.—*Patient.*—Mrs. H., aged 28, has been having attacks of pain over the precordia for the past year. These attacks are not connected with any gastric manifestations. The pain is of a squeezing character, is continuous and is made worse by any form of excitement. Examinations show a moderate blood-pressure and a mitral systolic murmur at apex.

Treatment.—The patient received some benefit from digitalis but the pain continued. Twenty minims of the crataegus given every four hours for two weeks caused the pain to disappear entirely and thus far, after three months, it has not returned.

In a few cases of non-compensating valvular disease, with symptoms in which there was an idiosyncrasy to the use of digitalis, it has afforded decided relief.

Notwithstanding the claims of the sectarians, I cannot satisfy myself that it has any decided diuretic action. In healthy individuals there is no appreciable rise in blood-pressure following its use. In disease I am not yet satisfied as to its blood-pressure-raising qualities. In a few cases there was an elevation of 10 mm., but it is a question whether it was due to the drug or to the rest and quiet.

In using this agent we must always keep in mind that it will not cover the whole field of cardiac therapeutics. In cases that resist the action of the digitalis group, there is but a faint chance that it will do good. In such cases it should be tried rather in combination than alone, as it seems to act better as a synergist. Most of us have had the experience of occasionally finding digitalis useless at first, but satisfactorily effective when combined with some other agent. Crataegus is essentially a mild cardiac tonic. When the heart is in a weak and irritable condition, following grip or in neurasthenia with a marked arrhythmia of the respiratory type, agents of the digitalis group are almost invariably badly borne. This is often a result of the digestive disturbance they so frequently entail. Here the crataegus often acts surprisingly well.

It is a perfectly safe agent with no poisonous effect. It can do no harm in aortic disease, and it is worthy of trial in these troublesome cases. In fatty degenerations and in heart lesions associated with high arterial pressure it should be a useful agent. It is better given during or after meals in doses of from 10 to 30 minims of a good fluidextract or a dram of the tincture. (The sectarian preparations of this agent are generally reliable.)

I frequently combine it with 20 grains of bromid and find that the effect is much intensified in the irritative conditions spoken of above.

As we all know, digitalis, the king of the heart, has many imperfections and shortcomings, and there is a constant search for agents to fill in the lacunæ left by these deficiencies. Sometimes these substitutes have for a time a vogue almost equal to that of the original.

More sober judgment always has shown the falsity of such claims. This agent fills one of these lacunæ and in no sense can it take the place of digitalis as a universal cardiac tonic.

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Hookworm Disease.—Stiles (*Public Health Reports*) finds no hookworm disease among the employees of the New England cotton mills, and believes the subject of child labor in the South, on account of that disease, presents a different aspect from that of child labor in the North. He would, however, place a 10-year-old daughter in the spinning room of a cotton mill rather than on the average small tenant farm in the South, as the disease is entirely due to soil pollution.

THE THERAPEUTIC MANAGEMENT OF ARTERIOSCLEROSIS BASED ON THE PRESENT VIEW OF ITS PATHOLOGY *

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Functional and structural derangement in the walls of arteries are the fundamental cause of many syndromes seemingly attributable to other pathologic conditions. The functional and structural states of arteriosclerosis are undoubtedly the prime cause in certain syndromes of the gastrointestinal system, of the nervous system and cardiovascular system not formerly so accredited. Recent studies in the clinical evolution of arteriosclerosis, especially in connection with that chief symptom, hypertension, have shown the early recognition and effectual treatment of this disease process to be of far-reaching importance.

With the purpose in view of setting forth this side of the subject this paper is presented. No new facts are to be added to our knowledge, but in the paper an effort will be made to call attention to the clinical aspect of arteriosclerosis in its broad sense and to indicate the remedial measures for its therapeutic management. It is unfortunate that the average medical mind should content itself with considering arteriosclerosis simply as an affection of the palpable arteries of the body. Arteriosclerosis, as now considered, embraces the whole arterial tree from heart to capillaries, whether they be in the brain, myocardium, kidney, liver, mesentery, intestines or extremities. As this broad view is presented it should not be thought to mean that arteriosclerosis shows itself only as a general disease. It is frequently symptomatically recognized as a local condition without the involvement of other parts.

THE STAGES OF ARTERIOSCLEROSIS

To approach this subject in a limited paper it would seem wise to treat the subject from a clinical standpoint and to apply the therapy to its clinical stages. A French[1] clinician has divided arteriosclerosis into four stages, which seems to place the several aspects of the disease in convenient form for our consideration.

1. *The Arterial Stage.*—By some this is called the stage of presclerosis, latent sclerosis or functional sclerosis. It is characterized by contraction of the arteries and by more or less spasm in the arterial wall, due to the toxins in the blood. It is held[2] that successive repetition of such accumulation of toxins in the bloodstream circulating for a long time in direct contact with the intima of the arterial wall excites that structure, and, later, the medial coat, to functional contraction. This abnormal contraction of the arterial wall is followed, in due course of time, by a superelevation of tension; at first more or less temporary, or transitory; later, more constant. Hypertension thus begun, with the intoxication, is productive of fixed arterial changes in the vessel wall. Some observers[3] consider hypertension a result and not a cause of arteriosclerosis.

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Huchard, H.: Formes cliniques de l'artério-sclérose, Paris, 1909.

2. Clombe, C.: L'artério-sclérose: sa pathogénie et son traitement, Lyon méd., 1907, cix, 433.

3. Huchard, Rosenbach, Broadbrent, Allbutt et al. contend that hypertension is a cause of arteriosclerosis, while Chantemesse, Hayem and Lancereaux combat this theory.

but others maintain that hypertension is a precedent factor, not denying that it is also a concomitant factor of arteriosclerosis. That interesting series of experiments of Lustig,[4] who, after having excluded all other possible factors, found that the blood-pressure was increased by beef broth from 5 to 10 mm. Hg in persons with healthy arteries and hearts, seems to confirm this view. Now this hypertension, in many cases, may be of pure kidney origin in its incipiency. It may be of splanchnic origin in other cases. This toxic substance may cause contraction of the arteries up to the size of the brachial; the effect of the hypertension on the arterial tree leads to excessive tension, especially tension in the aorta, and consequently the systolic action of the heart is accentuated. Increased cardiac activity, restricted visceral circulation and contraction in the arterial mains can mean only structural hypertrophy to heart and vessels to compensate for these abnormal states. To epitomize the symptomatology of the stage of presclerosis four groups of symptoms may be mentioned—intoxication, arterial hypertension, miopragia and intermittent claudication.

2. *The Stage of Cardioarteriosclerosis.*—This is characterized by the ingrafting of the organic changes in the arterial walls, by the functional spasm, with resultant arterial stenosis. The concomitant effect of renal insufficiency and myocardial degeneration, due to endarteritis in the vascular walls of these organs, is to cause increased intoxication on the one hand and degeneration of the coronary field on the other. In this form arteriosclerosis shows groups of symptoms centering about one of several regions. With the permanent hypertension, with or without palpable hardening in external arteries, with or without marked symptoms of nephritic degeneration, with or without evidences of marked intoxication, the syndromes which may characterize this state of the evolution of arteriosclerosis are as interesting as they are varied, be they cerebral, cardiac, renal or splanchnic. In this stage, toward its close, the grave terminations of this disease may occur as asystole, cerebral hemorrhage, uremia, etc.

3. *The Mitroarterial Stage.*—This stage in the clinical evolution of arteriosclerosis is characterized by dilatation of the cardiac cavities, frequently of the orifices, by a lowering of the arterial tension, by a tendency to edema, by hydrops, by congestion of the organs. It is what the French call the mitralization of the disease.

4. *The Cardiectatic Stage.*—This is characterized by marked dilatation of the heart, edema, more or less general, firm, irreducible dropsy of extremities, dropsy of abdomen and dorsolumbar region, right hydrothorax, edematous congestion of lungs, and passive congestion of the liver, etc.

PROPHYLAXIS

There is probably no pathologic condition in which the preventive method of treatment is of more value than in this wide-spread disease. Arteriosclerosis, in one or another of its forms, whether general or local, incipient or established, suddenly or gradually undermining the vascular structure of the body to the point of failing compensation, impending apoplexy, cerebral softening, or what not, should receive the most thorough consideration from the standpoint of prophylaxis. When we reflect on the facts that in adults, sometimes in the young, this disease is very common after the fourth decade; that it is the underlying factor in many secondary degenerations in the body; that it is the basic cause of various syndromes commonly attributable more directly to certain organs, as the heart, kidneys, nervous system, gastrointestinal system and the lungs, it is not unreasonable to call attention to its prophylaxis in more or less detail.

This disease is very likely to occur in all persons (especially after the fifth decade) who are the victims of, for a length of time, gout, uricemia, saturnism, syphilis, excesses or irregularities in alimentation or tobacco, these being, according to experience, the principal causes of the process. While mature age is a factor in the cause, this disease has been noted in the young. One observer has recorded a case in a subject aged 28. Montard-Martin has reported a case in a child, without kidney disease or syphilis, dying of smallpox; Andrel has confirmed a similar observation by a postmortem on a girl aged 8; Brooks has observed coronary sclerosis in a boy 15 years old. Thus it may be seen that the prophylaxis may be wisely instituted in all cases in which any of the principal causes are known to exist for any long period of time. This fact, taken in connection with the varied symptoms referable to the circulatory system occurring during that stage known as the functional or presclerotic stage, should enable the physician to foresee and forewarn of coming changes. Those symptoms of the cerebral, cardiac, nervous or gastrointestinal system, symptoms of intoxication, with hypertension, accentuation of aortic second sound, impermeability of the kidneys, speak of the impending arteriosclerosis, and persons showing these symptoms should be impressed with the danger threatening and directed along lines that would offer protection from the grave pathologic consequences.

It is true often that cases of arteriosclerosis are not seen until the disease is well established, not infrequently irremediably so, but it is also true that we see cases presenting the history of gout, or prolonged intestinal intoxication, or excesses in alcoholism or tobacco indulgence with these symptoms of miopragia. These are the cases in which the prophylaxis will accomplish much. These are the cases in which prohibition of excesses, elimination of intoxications and subsequent regulation of the food intake and habits of the individual, removal of vocational causes, and early and thorough treatment of specific disease will effect good prophylaxis. The excessive functional activity of the circulation should be curbed. The patient, having reached the fifth decade, with a history and an environment favoring the disease of the arteries, should in every case be plainly and emphatically instructed in the rules of more restrained life in which the eradication of the causal factors of arteriosclerosis should be attempted.

In cases of confirmed arteriosclerosis with secondary cardiac and renal involvement, or in cases with distinct tendencies toward mitral involvement and failing compensation of the heart, marked nephritis, cerebral disturbances or coronary symptoms, little can be accomplished in the line of prophylaxis so far as the disease itself is concerned, but it is nevertheless true, even in such cases, that much can be done to ward off and to defer the grave terminations. In some cases within my experience this line of procedure has beeen signally successful. The prevention of apoplexy for a few years, the control of coronary spasm, the supporting of the myocardium, the amelioration of the effects of kidney sclerosis may for a time enable patients with confirmed arteriosclerosis to do years of effective work.

4. Lustig, A.: Die Arteriosklerose und Gefässverkalkung und derenerfolgreiche Behandlung, Verhandl. d. Gesellsch. deutsch. Naturforsch. u. Aerzte, 1905.

For five years I have been able to prevent such a termination, which seemed almost certain in each case, of a school teacher, a preacher, a retired merchant (these I cite for illustration, among a number of others); and they are living comfortable lives, pursuing in modified regimen their several walks in life.

I dare to affirm that this subject is one which should engage the attention of the profession. It merits more consideration than has been accorded it. There is no disease problem, except that of the infectious diseases, more worthy of careful consideration than these diseases of the cardiovascular type. The teaching of the public mind is the secret in prevention of disease. When once the public mind is thoroughly aroused to the danger and to the means of prophylaxis, then the moral support and this knowledge upholds the hands of the physician, re-enforces his teachings, and carries conviction with his words. No structures of the body stand more abuse than the cardiovascular. No structures of the body, if protected and supported in time, will show more surprising recuperation. Therefore, I urge that the prevention of the oncoming arteriosclerotic changes be prevented by the removal of the known causes and that in established cases treatment be early instituted so as to forestall the inevitable evils sure to come in neglected cases.

MEDICINAL TREATMENT

Iodids.—For permanent results in the early cases of arteriosclerosis this group of drugs offers the best possibilities. The iodin qualities show in the double capacity of aiding in the destruction of the degenerated cells and in the restoration of the live but temporarily incapacitated cells. Such a therapeutic action tends to arrest the sclerotic process and to stimulate the normal structures to normal function. The continued good effects of this medication must be courted by gradually increasing the dosage until the organism secures enough stimulation to restore to activity the sluggish live cells and destroy enough degenerated cells to continue the restitution of function in the tissues. Small doses of the iodids, administered over a long period of time, fail to accomplish permanent results of a favorable kind. But large and progressively increasing doses produce strikingly good results, in early cases particularly. In the use of potassium iodid the patient should be started with a 10-grain dose three times daily; this should be daily increased until 60 to 70 grains are given each day. Iodism can be prevented in the administration of these large doses by the careful exclusion of acids from the diet and by the neutralization of the acid contents of the stomach.[5] This can be done by the use of any agreeable alkali, as the alkaline mineral waters. With potassium iodid it is wise to combine potassium bicarbonate in the proportion of one to two. The combination of sodium and potassium iodid, in connection with the alkaline medium, proves more satisfactory than the separate use of either and, therefore, when the use of these preparations is continued for a long period of time the combination of them is practiced. In this connection it should be stated that Romberg believes that potassium iodid possesses the virtue of reducing the viscosity of the blood and in that way assists in the relief of blood-pressure and in invigoration of circulatory tissues.[6] In cases in which the use of iodids by the stomach is impossible or unwise iodipin (iodized sesame oil, 25 per cent. iodin) can be administered by injection subcutaneously or intramuscularly in doses from 15 minims to 2½ fluidrams every second or third day. The absorption of the iodin is slow and the fear of iodism need not be entertained.

Thyroid Extract.—This is very useful in arteriosclerosis.[7] Its chief virtue is its power to control high arterial pressure. Iodothyrin is also efficacious in this connection.[8] I have used this remedy for a number of years, especially in women in whom the signs of arteriosclerosis are associated with possible thyroid disease; marked benefit has attended this line of medication in these cases. Lancereaux[9] states that he and Paulesco have employed iodothyrin in arteriosclerosis with excellent results. They administered 2 to 5 tablets of 25 centigrams each during twenty-four hours and found their patients benefited.

A So-called Serum.—Trunecek[10] has described a so-called serum for use in arteriosclerosis. It is composed of such ingredients as sodium chlorid, sodium sulphate, sodium carbonate, calcium phosphate, magnesium sulphate; and its originator claims for it good effects in arteriosclerosis, but other observers fail to note such favorable results, while still others state that pronounced harmful effects have been observed during its administration.

Nitrites.—The members of this group of drugs possess peculiar efficacy in arteriosclerosis. Their value rests on their ability to reduce high blood-pressure. They act promptly by vasodilatation. The official members of this group are amylis nitris, spiritus glycerylis nitratis (glonoin or trinitrin) and sodii nitris. If instantaneous effect is imperative, as in cases of angina pectoris, the use of amyl nitrite is called for. But its transitory effect renders it of very little use in cases demanding prolonged medication. It is an emergency remedy in this connection. Nitroglycerin, while somewhat slower than amyl nitrite in its vasodilator effect (although very rapid when administered hypodermatically), is more lasting in its effect on hypertension. In cases in which the use of this nitrite is continued the use of the spirits of glyceryl nitrate in one or two drop doses is more desirable for the reason that its control of the high blood-pressure is more permanent. Sodium nitrite is more lasting in its effect than the other members of this group. It is slower in effecting its therapeutic action. In cases of arteriosclerosis demanding prolonged use of the nitrites this preparation is the most useful. Erythrol tetranitrate, introduced as a useful remedy in arteriosclerosis by Turney of Flintshire, England, lowers blood-pressure and maintains its vasodilator effect for a longer period of time than others of this class. Its effect is begun in fifteen to twenty minutes after its administration and persists for three to four hours thereafter. The dose is from ⅓ to 1 gr. The variation in the amount and frequency of the dose is regulated by the demands of the case and the effect on the patient. I recall that in one case of pronounced arteriosclerosis a small dose acted very badly, producing throbbing in the head, giddiness and great nervous excitement.

Theobromin.—The members of this group of drugs possess desirable vasodilator qualities, especially, one

5. Erlenmeyer and Stein, H.: Iodin in Arteriosclerosis, Therap. Monatsh., Berlin, 1909.
6. Minkowski, O.: Die Diagnose und Therapie der Arteriosklerose, Therap. Monatsh., 1907, xxi, 449.
7. Osborne, O. T.: Yale Med. Jour., 1907, xiii, 115; Ferguson, John: Arteriosclerosis, Canada Lancet, 1908, xli, 423.
8. Hunt, R., and Seidel, A.: Studies on Thyroid. 1. The Relation of Iodin to the Physiologic Activity of Thyroid Preparations, Hyg. Lab. Bull. 47, U. S. P. H. and M.-H. S., October, 1908.
9. Lancereaux: L'artério-sclérose; sa pathogénie et son traitement, Bull. de l'Acad. de méd., Paris, 1908, series 3, lix, 597.
10. Trunecek: Med. Press. and Circ., 1902, new series, cxxiv, 567.

author states, in connection with the coronary circulation. They are known to have decided diuretic effect and thus help in the reduction of arterial hypertension and in the reduction of intoxication. Theobromin sodium salicylate, or diuretin, and theophyllin, or theocin, are favorably mentioned by several clinicians in this connection for their cardiac and renal effects. One observer particularly emphasizes the usefulness of this group in those cases of arteriosclerosis giving retrosternal pain and angina pectoris. Huchard advises the use of theobromin, as it directly stimulates the renal secretion, dilates the peripheral vessels, including the coronary and renal arteries, and at the same time stimulates the heart. Its derivatives may be used in place of the alkaloid and with more effect, since they are more soluble. In this connection diuretin and theocin are recommended.

Calcium Monoiodobehenate.—Sajodin or monoiodobehenate of calcium, a colorless, odorless and tasteless powder, reputed to contain 26 per cent. of iodin and 4.1 per cent. of calcium, is said to be as efficient as potassium iodid without the unpleasant and harmful by-effects of iodism. It is given in doses ranging from 15 to 45 grains daily. I have no experience with this preparation.

DIETETIC AND HYGIENIC TREATMENT

Alcohol, tobacco, tea, coffee, should be interdicted in arteriosclerosis. This statement is subject to modification in special cases. But as a general proposition these substances, when used habitually, produce deleterious effects in the arteries and should be restricted to a minimum if not absolutely stopped. This is imperative in the late stages; it is wise in the early ones. All food should be taken in moderation. Excess of diet should be plainly and emphatically stopped. This applies in the early stage, but in the late it is imperative. Moderation in eating and drinking is essential to the arrest of the pathologic processes under consideration. As a general rule, the animal foods should be restricted, for in these foods there are formed during digestion substances that but add to the conditions already prevailing in the body. The evidences of fermentation and putrefaction of food in the intestinal tract must be looked for and the diet must be controlled with the idea of reducing this condition to a minimum if not of eliminating it entirely. The vegetable diet may be recommended to the exclusion of the meat diet. In some cases, late in the disease, a milk diet is required.

The habits of the patients must be carefully controlled. Excessive physical exercise should be forbidden. In the late forms unusual strain on the circulation must be avoided. Intense excitement, in business or in pleasure, should be shunned. Moderation in the degree and intensity of all physical and mental exercises should be invariably practiced. Many patients as they enter the stage of myocardial incapacity require absolute mental and physical rest. These patients must be kept in a recumbent position until blood-pressure can be reduced and myocardial, arrhythmic and tachycardiac symptoms are controlled. It is, indeed, very gratifying to note the good effects of such a line of treatment in cases that point to early termination in broken compensation. The peripheral circulation should be carefully protected from sudden changes of the weather. This is done by use of proper clothing.

PHYSICAL METHODS

The discussion of physical agents for the relief of arteriosclerosis, such as baths, electricity, massage, is not within the scope of this paper. The value of any one of these agencies depends on the case and the nature of the therapeutic application, the mode, frequency and degree of its administration. There are patients who have received some benefit in the matter of lowering high tension from the D'Arsonval current (high frequency) while in the hands of other therapists the benefit has been wanting. Likewise it is my experience that the use of baths, under proper limitations and skilful and prudent administration, is most helpful to the peripheral circulation and aids in the elimination of toxins from the skin, thus in both ways favoring the lowering of high tension and the arrest of arteriosclerotic changes. Rubs and massage, when properly used, may be found useful adjuncts in the general plan of treatment.

SUMMARY OF THE THERAPY OF THE CLINICAL STAGES

Incipient Stage.—Patients showing incipient arteriosclerosis should be placed on a strict diet, instructed in the nature of the disease threatening, and ordered to follow careful regimen of habit. These patients should be given antitoxic treatment, consisting in elimination, intestinal disinfection, diaphoresis, and diuresis; they should receive, when hypertension persists, the nitrites and iodids, and keep on this line for a given length of time.

After a certain period of time during which the blood-pressure is lowered, the intoxication is relieved, the kidney activity becomes normal in quantity and quality, and the symptoms of arterial spasm removed, such patients can be considered cured with assurance of permanency so long as the rules laid down for guidance are adhered to.

Cardioarterial Stage.—This is the incurable phase of this disease, but it is a stage in which therapy, properly applied and maintained, accomplishes much in the way of preventing the grave terminations and in removing many of the distressing symptoms. This point is well illustrated by a patient whom I have had under my care for six years. During this time he has had many attacks of angina pectoris. When first seen the condition was more or less intractable, but during the last year the patient has been without discomfort. These cases, often showing tachycardia, arrhythmia and gastrointestinal intoxication, should be handled with extreme caution and care. The myocardiac morbid phenomena are to be taken to be danger symptoms. Relief of the miopragic symptoms, the elimination of the intoxicants, the stimulation of kidney activity, are the chief indications. This is accomplished by catharsis, followed by nitrites and spartein sulphate, etc. With the tension lower and the skin, bowels, kidneys active, and under the restrictions of diet, the use of nitroglycerin, erythrol tetranitrate, potassium or sodium iodid, thyroid extract, regulation of habit, and general medical supervision of patient, the disease is arrested and the terminal calamities prevented.

Mitroarterial and Cardiectatic Stages.—In these stages, which merge into each other so closely as to form one continued progress to broken compensation, with dilatation of cardiac cavities and frequently orifices, lowered arterial tension, more or less visceral congestion, edema, and dropsy, are to be treated with the digitalis group, theobromin, interdiction of salt intake, restriction of diet to milk, and careful elimination of fluids. In these cases, which often appear hopeless, much can be done, nevertheless, to restore the patient to modified activity.

NOTE.—In addition to the references already cited, the following may be consulted:

Anderson, H. B.: The Etiology and Pathology of Arteriosclerosis, Am. Med., 1904, vii, 462-430.
Askanazy, M.: Ueber Arteriosklerose, Aetiologie und pathologische Anatomie, Therap. Monatsh., 1907, xxi, 443.
Burwinkel, O.: Ueber Arteriosklerose, Munich, 1908.
Coplin, W. M. L.: The Early Lesions of Arteriosclerosis, with Special Reference to Alterations in the Elastica, Proc. Path. Soc., Philadelphia, 1904, vii, 133
Cowan, John M.: The Current Theories Regarding the Causation of Arteriosclerosis, Practitioner, London, 1906, lxxvi, 317-31.
Dunn, A. D.: Some General Considerations in Regard to Arteriosclerosis. West. Med. Rev., 1907, xii, 447, 463.
Herringham, W. P.: Arteriosclerosis, Brit. Med. Jour., 1907, p. 61.
Klotz, Oskar: Classification and Experimental Production of Arteriosclerosis, Brit. Med. Jour., 1906, ii, 1767.
Longcope: Proc. Path. Soc., Philadelphia, 1904, vii, 170.
Mackenzie, J. J.: The Pathology of Arteriosclerosis, Canada Lancet, 1908, xli, 817.
McPhedran, A.: The Treatment of Arteriosclerosis, Canada Lancet, 1908, xli, 851-856.
Savill, Thomas D.: Arterial Sclerosis, Especially in Regard to Arterial Hypermyotrophy and the Other Morbid Changes Which Occur in the Muscular Tunic of the Arteries, Lancet, London, 1904, ii, 875.
Spiller: Proc. Path. Soc., Philadelphia, 1904, vii, 156.
Thayer, W. S., and Fabyan, Marshall: Studies on Arteriosclerosis, with Special Reference to the Radial Artery, Am. Jour. Med. Sc., Philadelphia, 1907, new series, cxxxiv, 811-829.
Walton, G. L., and Paul, W. E.: Arteriosclerosis: Its Clincial Study, THE JOURNAL A. M. A., Jan. 18, 1908, l, 169.

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ABSTRACT OF DISCUSSION

DR. GEORGE F. BUTLER, Wilmette, Ill.: I believe that much can be done to prevent arteriosclerosis. Eliminating syphilis as a factor, I believe that autotoxemia, or acidemia, is the principal cause of arteriosclerosis. If we test the urine early in these cases we will find that almost invariably there is evidence of intestinal fermentation or decomposition. There will be shown also, by an examination of the urine, that there is, in the majority of cases, a high degree of urinary acidity, indicating acidemia. These conditions favor degeneration of the blood vessels. Whenever the urinary acidity of any man exceeds 40, that man is on the borderline of danger. If the acidemia and intestinal decomposition can be overcome, much can be done to retard the degeneration of the blood-vessels. I think that the good success we have had with potassium iodid and sodium bicarbonate in the treatment of arteriosclerosis is due to the rapid elimination of waste products occasioned by the potassium iodid and the changing of the acid condition—not the acid condition exactly, but the acidemia—by the sodium bicarbonate. The daily use of sodium bicarbonate will lessen the urinary acidity and overcome the acidemia, while the daily use of potassium iodid serves as a powerful eliminant of toxic products. As a purely symptomatic remedy the nitrites are very valuable. I think sodium nitrite is better than any of the others; that is, I like it better, but the trouble with all of them is that their effects subside too quickly and unless the administration is kept up at frequent intervals so as to maintain a uniform dilatation of the arterioles, there is not much use in giving them. If we could get a drug which would produce dilatation of the blood-vessels and if that dilatation could be maintained for five or six hours before we should need to give another dose, I think we would have the ideal vasodilator. Now it may be that some remedy like aconite or veratrum would do this, but I cannot say, as I have never used these drugs. I wish to endorse especially the dietetic treatment. Eliminate the proteids, give plenty of water. Psychic treatment should be employed for it is necessary to relieve all anxiety and worry which have a deleterious influence on the blood-vessels and heart. And, by all means, correct the acidemia and favor elimination by alkalies and potassium iodid, and overcome, if possible, gastric and intestinal indigestion and fermentation.

DR. JOHN N. UPSHUR, Richmond, Va.: After an experience of many years, I am not very hopeful along the line of cure. The difficulty is to convince a man that he is in need of treatment, the trouble is so insidious. The cause is along nutritive lines. The blood-vessels suffer from this cause—impairment of nutrition from gastrointestinal digestive disturbance, abuse of alcohol, tobacco and too rich a diet. Nervous strain is often back of the digestive disturbance, gastric motility being interfered with fermentation results and toxins are absorbed. When people are warned against these things—too rich diet, alcohol and tobacco—they simply will not believe the physician and elect to take the chances. I do not approve of the alkaline treatment, especially iodid of potassium; it is too apt to impair digestion and is not well-borne by the stomach in many cases. I prefer to treat these patients by a simple but nutritive diet—milk, buttermilk, skim milk. The irritation of the kidneys by alkaline drugs may lay the foundation for the development of nephritis. The condition comes on in the decline of life—it is a process of decay. Therefore, be cautious about drugs. In the weak heart of this condition I would commend sulphate of spartein in doses of from ¼ to ½ grain. It may be given in even larger doses I would be glad if members of the Section would try it.

DR. ALEXANDER G. BROWN, JR., Richmond, Va.: It is not contended in the paper that we have the hope that we will remove from the human family at one fell stroke arteriosclerosis. The purpose of the paper is to awaken in the minds of the profession the early recognition of this disease, which is a potent factor in decay, early enough to ward and to keep off decay and to prolong life. And it is with that idea in view that I recommend the administration of iodid of potassium in connection with sodium bicarbonate, for instance; not to the degree of doing harm, but to the degree in which it will do good. I hope that the members of the profession will see these early signs of breaking down and prevent them.

TETANUS DEVELOPING TWELVE DAYS AFTER SHORTENING OF THE ROUND LIGAMENTS—RECOVERY*

REUBEN PETERSON, M.D.
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In 1899 Dr. Joseph Taber Johnson reported before this section at the Newport meeting a case of tetanus following ovariotomy. The patient was operated on at his private hospital, and her death was the only one that had occurred in that institution for eighteen months. No other case of tetanus had been noted in any hospital or dispensary with which he had been connected; in fact, within his knowledge no case of tetanus had occurred throughout Washington for several years.

Twenty years have elapsed since that meeting. We have accomplished much through efforts to perfect our surgical technic. We know more about bacteriology, including the life history of the different pathogenic bacteria. The mortality and morbidity incidental to surgical work apparently has been reduced to a minimum. Even suppuration of an abdominal incision is a rare occurrence, necessitating an explanation as to causation in each individual case. Therefore, when last year tetanus developed in a patient operated on in my own institution, where the surgical technic is entirely under my control, not only was it startling, but it seemed of enough importance to warrant a thorough investigation and discussion. Let no man imagine himself so far superior to his fellow surgeons as to be exempt from complications such as this. Surely pride goeth before a fall. I am convinced now of the truth of the saying that if a man operate long enough and often enough he can illustrate in his own practice almost every surgical complication.

The case which serves as the basis of this paper is as follows:

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

REPORT OF CASE

The patient was single, aged 19, a student by occupation. She had suffered severely from dysmenorrhea since the establishment of her periods at the age of 13.

Operation.—The uterus was found to be somewhat enlarged and retroverted and to overcome the dysmenorrhea, curettage and shortening of the round ligaments were advised. These operations were performed at my private hospital, Nov. 17, 1908. As the uterus was freely movable, the abdomen was not opened, but the ligaments isolated and shortened within the inguinal canals through a single suprapubic incision. The shortened ligaments were held in place by catgut rendered sterile by a modified Claudius iodin method. The same material was employed for closing the inguinal canals and bringing the deeper portions of the incision together. Michel's clamps were used to coapt the edges of the skin incision.

For twelve days the patient had an uninterrupted convalescence. The stitches were removed on the tenth day and the wound found to have healed by primary union.

Postoperative Complication.—On the twelfth day the patient laughingly said that she thought she was going to have the mumps as her face was sore at the angles of the jaw and the latter seemed stiff. Parotitis, which at times follows gynecologic operations, was suspected. Examination showed no enlargement of the glands and there was no elevation of temperature. The soreness and stiffness of the jaws continued about the same for the next few days. The patient sat up on the fifteenth day for a short time. The jaws were sore and stiff, so that she ate solid food with difficulty. There was no rise of temperature or pulse, however, and the patient did not seem ill. For the next three days the patient's condition remained about the same with possibly a slightly increasing inability to open the jaws. The real nature of the disease was not suspected until the eighth day after the first complaints of stiffness about the jaws when the muscles of the back and the neck became rigid. There were sudden spasms of the muscles of the jaw, so that the patient frequently waked from a sound sleep from having bitten her tongue. As the day progressed the patient became quite excitable and for the first time the temperature was elevated, being 100 per rectum. Thoroughly alarmed at the condition of the patient and convinced that I had to deal with a case of postoperative tetanus, I sent for my friend, Dr. W. H. Hutchings of Detroit, as he had had considerable experience with the treatment of this disease by the use of chloretone. We saw the patient together about 11 p. m. December 6, the twentieth day after the operation and the eighth day since the development of the slight soreness and stiffness of the jaws. Examination at this time revealed marked trismus, the patient being able to open her jaws only enough to admit a feeding-tube. The muscles of the neck and back were rigid so that the patient could be lifted slightly from the bed by raising the head from the pillow. The abdominal muscles were rigid and somewhat painful on palpation. The patient had no difficulty in swallowing, although nourishment had to be taken through a tube. There were slight twitchings of the muscles of the face, although there was no risus sardonicus. Sudden movements about the bed, as for example the turning on of the electric light, caused contractions of the muscles of the neck and back, although opisthotonos was not present.

Treatment.—At 11:30 p. m. sixty grains of chloretone dissolved in hot olive-oil were administered per rectum. Within an hour the clonic contractions of the back muscles had ceased. The patient was much less rigid and could open her jaws decidedly more than before the administration of the antispasmodic. She expressed herself as very comfortable but very sleepy and thought she would have a good night. At 11:30 a. m. after the subcutaneous administration of 1,500 units of the antitetanic serum the patient slept until 5 o'clock when she was awakened by the spasmodic biting of the tongue. At 7 a. m. there was a return of the clonic contractions in the muscles of the back, the convulsive movements occurring from one to four minutes apart. At 9 a. m. the patient was again given sixty grains of chloretone by the rectum and at 10 o'clock another 1,500 units of antitetanic serum. After the second dose of chloretone there was no recurrence of the convulsive seizures. There was a gradual relaxation of the rigid muscles, although it was about a week before the jaws could be opened normally. Following the two large doses of chloretone the patient continued in a drowsy condition and slept a good portion of the time. Although there were no further muscular spasms, as an additional precaution, chloretone in thirty-grain doses was given daily for three successive days. Salines per rectum were given every two hours, beginning shortly after the administration of the first dose of chloretone. These injections were continued for eight days, although of necessity, because of the intolerance of the rectum, the intervals between the injections had to be gradually lengthened. However, a large amount of saline solution was absorbed during this period. The bowels were kept open, at least one free movement being secured daily.

Course of Disease.—After the second dose of the antitetanic serum, the wound was examined. It was found to have healed by primary union with the exception of a small point at the extreme right hand corner. Here was situated a minute blister, containing clear serum. Careful bacteriologic examination of this fluid failed to demonstrate the tetanus bacillus, the cultures showing staphylococci only. The patient left the hospital in excellent condition, thirty-two days after her operation and twenty days after the first appearance of the tetanus.

Now I propose to reverse the mental processes of the operator who is unfortunate enough to have a case of postoperative tetanus in his practice. After establishing the diagnosis his first thought is to save his patient; his second consideration is to ascertain the cause of the attack, so that he may guard against such an accident in the future. Hence the questions before us are:

I. What gives rise to postoperative tetanus?
II. What is the treatment of such a complication?

THE CAUSE OF POSTOPERATIVE TETANUS

By postoperative tetanus is meant the unexpected development of tetanus in an operative case, when there has been no history of traumatism, or conditions favoring the introduction of the tetanus bacillus. In other words, this definition includes cases which, barring the accidental introduction of the tetanus bacillus, would have ended in the complete recovery of the patient.

In the case just reported, the only change in the ordinary surgical technic of the hospital which up to this time had yielded gratifying results, was the use of a different kind of catgut. For years in my private work I have employed a catgut prepared by a firm which deservedly has acquired a good reputation from the quality of the gut it has placed on the market. Last year, however, it was thought advisable to have the catgut prepared in quantities by my laboratory assistant, a man well trained in pathology and bacteriology. I was loath to employ a new catgut, however, until the method and results of its sterilization had been approved by the highest authority. Therefore, before using the catgut in the hospital it was prepared and tested in Prof. F. G. Novy's bacteriologic laboratory in the University of Michigan. The mode of preparation was as follows:

A saturated solution of iodin crystals in chloroform was prepared by rubbing up in a mortar and allowing to stand for forty-eight hours. This solution was then filtered and the catgut immersed in it for eight days.

The catgut, thus prepared, was then tested as follows:

Test 1.—The coils of catgut were lifted from the containing jar with sterile forceps and from each of four coils there was excised with sterile scissors a piece from 2 to 5 cm. in length. These short pieces were allowed to stand twenty-four hours in sterile distilled water and then planted in deep

bouillon tubes (20c.c. to the tube) and incubated at 37 C. for seven to fourteen days. This lot was unchanged at the end of this time save for one tube, which had been contaminated with some mould.

Test 2.—The above test was repeated with four other short pieces of catgut and after two weeks incubation only one tube was clouded. Stains and animal inoculations from this tube were negative.

From the results of these experiments I felt perfectly safe in using the catgut prepared according to this method, perhaps more so since for some years I had been using at the University Hospital practically the same catgut with the best results.

Before the development of symptoms of tetanus in the case reported the catgut had been used in quite a number of cases with the most satisfactory results, all the wounds healing by primary union and the convalescence in each case being uninterrupted.

I fear that many operators who report cases of tetanus following clean operations have fallen into the same error as did I in their attempts to absolve the catgut from any part in the causation of the disease. At first sight it seems reasonable to say it could not have been the catgut because the same material was employed in other cases with no bad results. Kuhn, however, has shown the fallacy of such an argument. He asserts that catgut is made from the intestines of sheep which exist under different conditions and vary much in health. Every catgut thread contains fibers from four or five different sheep. Just one of these fibers may contain the tetanus bacillus, while the others may be free from this particular germ. He goes on to say that the sanitary conditions in the slaughter-houses and factories from which the catgut comes are notoriously bad, exposing the raw material to all kinds of contamination. Experimentally it has been shown that it is most difficult for a sterilizing fluid to reach the interior of a catgut thread where many germs may lie. In order to insure absolute safety and do away with the possibility of postoperative tetanus, where catgut is to be used, the latter material must be taken from animals in perfect health. It must be prepared under the most hygienic conditions. Then the elementary threads should be tested for the tetanus bacillus and those found free of these organisms should be made into catgut which can be sterilized according to the most approved method.

Sterilization of catgut by boiling, while better than the use of chemical solutions, because of the possibility that the latter may not penetrate every portion of the catgut strand, has never been popular because of the difficulty of boiling the gut without destroying its integrity. It must be remembered, as pointed out by Theobald Smith, that under certain conditions, such as the formation of a pellicle or membrane over the surface of the boiled fluid, spores of anaërobic bacteria, such as the tetanus bacillus, resist repeated steamings for twenty minutes regularly, usually for forty minutes and occasionally for sixty minutes. Possibly the tests which have been employed to ascertain the asepticity of catgut, while applicable to the ordinary pathogenic bacteria, contain a source of error when used for anaërobic bacteria, like the tetanus bacillus. Are not we satisfied if the test-tubes without anaërobic conditions fail to show any growths? Implanted in the tissues, the tetanus spores, which have not been killed by the sterilization employed, develop under these anaërobic conditions and tetanic symptoms result.

Smith further on in the same article makes these statements, which are of special interest to the practical surgeon

The great resistance of tetanus spores concerns both the practicing physician and surgeon and the laboratory worker who is engaged in the preparation of biologic products for subcutaneous administration. As regards the surgeon, I do not believe that the usual disinfection by boiling or steaming at 100 C. such as may be resorted to away from the hospitals need be placed under suspicion or discarded, but whatever has come in contact with fecal matter or with material undergoing putrefaction should be autoclaved at 110 C. to 115 C. unless the disinfective action of the boiling water in which objects are immersed is increased by alkalies and other substances.

In view of the extensive use of catgut in all kinds of surgical operations, it is of the utmost importance that the question of production of postoperative tetanus through its means be thoroughly investigated and discussed. While convinced that the postoperative course of my surgical cases is much smoother since the employment of the absorbable ligature, I would give it up at once were I convinced that my patients are liable to such a deadly infection as tetanus. One experience is enough to satisfy the most callous surgeon.

Recently Richardson has reported two cases of tetanus following operations for gallstones and for strangulated omental hernia. He has collected notes of 21 such cases in which tetanus followed a surgical operation, 20 occuring during the past three and a half years. In all these 21 cases catgut was employed, and in all except 2 the peritoneal cavity was opened. The operations were performed in Great Britain and 18 of the 21 patients died. The catgut used at the operations was examined bacteriologically in 14 cases, but these examinations were incomplete and Richardson thinks that it has not been proved that the catgut was the source of the infection. We are more interested in the number of cases Richardson has collected than in his rather fantastic suggestion that the disease from which the 18 patients died was not tetanus at all, but one of the sheep diseases, the patient being the host of the bacillus at the time of the operation. Richardson seems to base his entire argument on the geographical distribution of the cases and admits that if cases of postoperative tetanus developed in the south of England, where "looping-ill," the disease in question, does not exist, then his whole argument fails. While his argument does fail, for a search through the literature shows a wide distribution of the cases, shattering the geographical explanation of the infection beyond a shadow of a doubt, we should be under great obligation to Richardson for his collection of cases and his courage in showing this complication to be so common in Great Britain.

As an aid to the study of the various aspects of the question of postoperative tetanus, I have collected from the literature some 150 cases of tetanus following operations, in the main of a gynecologic nature. A few operations, like splenectomy, appendicitis, nephrotomy and hernia, operations which the gynecologist may be called on to do, no matter how strictly he may follow the lines of his specialty, have been included in the list. Excluding traumatic tetanus, many more cases could have been added, if general surgical operations had been included.

These 150 cases have been divided into two groups; the first, Table 1, numbering 101 cases which had occurred up to and inclusive of the year 1890; the second, Table 2, comprising 49 cases reported since 1890. Richardson's two cases were included in this last group, the other 19 cases reported by Richardson being unavailable for statistical purposes because of insufficient data. The lack of references in his article implies that the records

of the 19 cases had been obtained through correspondence. If this be true, it would bring the total number of cases of postoperative tetanus since 1890 up to 70, it being remembered that these were largely abdominal and gynecologic cases, general surgical operations having been excluded.

The year 1890 has been chosen as the dividing line between the two groups, for the reasons that Phillips collected up to this date, through private correspondence and from the literature, 64 reports of cases of tetanus following ovariotomy, and because 1890 is a good date to separate the preantiseptic and antiseptic eras. For,

TABLE 1.—101 CASES OF POSTOPERATIVE TETANUS UP TO AND INCLUDING THE YEAR 1890

A. OPERATIONS INVOLVING THE OPENING OF THE PERITONEAL CAVITY

Operation.	No. Cases.	Recovery	Death.
Herniotomy	11	0	11
Hysterectomy for fibroid	1	0	1
Myomectomy	1	0	1
Oöphorectomy	2	0	2
Ovariotomy	63	5	58
Vaginal hysterectomy	1	0	1
Total	79	5	74

B. OPERATIONS IN WHICH THE PERITONEAL CAVITY WAS NOT OPENED

Operation.	No. Cases.	Recovery	Death.
Excision of breast	11	2	9
Hydrocele	3	1	2
Operations on cervix	4	2	2
Perineorrhaphy for prolapse	1	0	1
Perineorrhaphy for complete tear	1	0	1
Prolapse of rectum	1	0	1
Uterine polyp	1	0	1
Total	22	5	17

Total number of operations 101.
Recoveries, 10; 9.9 per cent.
Deaths, 91; 90.09 per cent.

TABLE 2.—FORTY-NINE CASES OF POSTOPERATIVE TETANUS OCCURRING AFTER THE YEAR 1890

A. OPERATIONS INVOLVING THE OPENING OF THE PERITONEAL CAVITY

Operation.	No. Cases.	Recovery	Death.
Alexander	2	1	1
Alexander and perineorrhaphy	2	1	1
Appendicitis	3	1	2
Colectomy	1	0	1
Herniotomy	4	1	3
Hysterectomy	10	1	9
Myomectomy	1	0	1
Ovariotomy	2	0	2
Removal of appendages	3	0	3
Removal of gall-stones	1	0	1
Splenectomy	1	0	1
Tuberculous peritonitis	1	1	0
Vaginal fixation	1	0	1
Vaginal fixation and trachelorrhaphy	1	0	1
Vaginal hysterectomy	4	0	4
Ventral hernia	1	0	1
Ventro-fixation	2	0	2
Total	40	6	34

B. OPERATIONS IN WHICH THE PERITONEAL CAVITY WAS NOT OPENED

Operation.	No. Cases.	Recovery	Death.
Amputation of cervix and perineorrhaphy	1	1	0
Epithelioma of vulva	1	0	1
Hemorrhoids	2	0	2
Lumbar nephrotomy	1	0	1
Nephropexy	1	0	1
Removal of uterine polyp	1	0	1
Trachelorrhaphy and perineorrhaphy	1	0	1
Varicocele	1	0	1
Total	9	1	8

Total number of operations, 49.
Recoveries, 7; 14.28 per cent.
Deaths, 42; 85.71 per cent.

while antisepsis had been proved to be correct in principle years before, it certainly was not generally adopted by surgeons until about this year. Furthermore, it was in 1889 that Kitasato first isolated the tetanus bacillus in pure culture and studied its biologic characters.

Before 1890, outside of the mere preparation of suture material, there were many more chances for the introduction of the tetanus bacillus into the wound than after that date, when more rational means were employed to sterilize extraneous objects. Hence only the forty-nine cases collected since 1890 were studied with reference to the suture material. The information collected was very meager and unsatisfactory. The suture material employed was mentioned in only nineteen cases: Bissell (2); Chavannoz, Coe (2); Dorsett (2); Hammond, Jerie, Koch, Martin, Meyer, Penrose, Richardson (2); Shaw, Thompson, Zacharias (21). From these cases I find that there was used:

Catgut alone	3 cases
Catgut and kangaroo tendon	2 cases
Catgut, silk, silkworm gut or silver wire in combination	8 cases
Silk alone	4 cases
Silkworm gut alone	1 case
Silk with silver wire	1 case

In only two or three of these cases are definite statements made as to the preparation of the catgut, so we are at a loss to determine whether a possible source of error lay in such preparation. That the infection is not

TABLE 3.—CASES SINCE 1890 IN WHICH ATTEMPTS WERE MADE TO ISOLATE THE TETANUS BACILLUS AND RESULTS *

No. of Case.	Where Found.	Attempts Made.	Failure.	Success.	Recovery.	Day of Death.
20	Silver suture.	1	Yes	...	...	2
55	Pus from stump (1); Pus from stump where mouse was inoculated (2).	2	Yes	...	...	2
83	Pus from abdominal wound.	1	...	Yes	...	25
45	Wound.	1	...	Yes	...	2
48	Pus from abscess in paravaginal wound; secretion from wound with catgut sutures; cerebrospinal fluid; piece of skin from edge of wound.	1	Yes	...	...	16
59	Pus from abscess found in pelvis.	1	...	Yes(?)	...	2
67	Serum from below sutured skin of wound.	1	Yes	...	Yes	..
12	Not stated.	1	Yes	...	...	3
130	Not stated.	1	Yes	...	...	†
52	Not stated.	1	...	Yes	...	12
89	Not stated.	1	Yes	...	...	†
82	Not stated.	1	Yes	...	...	2
102	Secretion from seat of ulcer.	1	Yes	...	...	2
27	Area of subcutaneous tissue from scab on skin under left scapula.	1	...	Yes	...	3
28	Pus from wound (1); Kangaroo tendons (2); catgut (3).	3	Yes(3)	Yes(1,2)	...	3
87	Unused catgut.	1	Yes	...	...	2
80	Serum from blister in wound.	1	Yes	...	Yes	..
31	Blood from finger (1); Arachnoid fluid (2).	1	...	Yes	...	3
36	One stitch.	1	Yes	...	...	2
22	Blood suture materials and dressings.	1	Yes	...	...	20
23	Blood and vaginal discharges; suture material and dressings.	1	Yes	...	...	2

* The number in column "No. of Case" refers to the number of the case in the appended bibliography.
† Not stated.

due to catgut in all cases is proved by postoperative tetanus in 6 cases in which silk or silkworm gut was either used alone or in combination with silver wire. A former Chairman of this Section, Dr. Dorsett, has given by far the most satisfactory report of his two cases of postoperative tetanus. His two patients died from this complication after the uterus had been sutured to the abdominal wall in each instance by kangaroo tendon sutures prepared by one of the best known manufacturing firms of this country. By inoculation into mice, the kangaroo tendon was proved to be infected with the tetanus bacillus.

Koch was able to prove that the catgut employed was the agent through which the infection arose. While he was unable to find the tetanus bacillus or its spores within the gut, mice inoculated with the gut died of

tetanus. Chavannoz, Hammond, Coe, Richardson and Zacharias made either cultures of or inoculations with the suture material with negative results.

There were only two recoveries in the 19 cases just referred to (Meyer, Zacharias). This is of no special significance, since it is about the average of recoveries (10 per cent.) after this most fatal complication of surgical operations. The difficulties of adequate bacteriologic examination of suture material after the advent of the disease will always be great. Just as in my own case, the wound may have healed by primary union and the catgut either be absorbed or difficult to get at. The tetanus is not a rapidly multiplying organism and it is exceedingly difficult to isolate it after the infection has taken place. This applies to the bacilli and the spores in the catgut as well as to the same organisms in or about the wound.

TABLE 4.—98 CASES OF POSTOPERATIVE TETANUS OCCURRING UP TO AND INCLUSIVE OF YEAR 1890

WITH SPECIAL REFERENCE TO THE ONSET AND ITS RELATION TO THE OUTCOME OF THE DISEASE

Day of onset after operation.	No. of Cases.	Recovery.	Deaths	Day of death. 1	2	3	4	5	6	7	8	10	11	13	20	
1	0	0	0	..	..	..	..	..	..	..	..	..	..	..	..	
2	0	0	0	..	..	..	..	..	..	..	..	..	..	..	..	
3	3	1	2	..	2	..	..	..	..	..	..	..	..	..	..	
4	4	0	4	..	3	..	..	..	..	..	..	..	..	..	..	Not stated, 1
5	6	1	5	2	3	..	..	..	..	..	..	..	..	..	..	
6	9	1	8	4	2	2	..	..	..	..	..	..	..	..	..	
7	18	0	18	3	10	5	..	..	..	..	..	..	..	..	..	
8	10	0	10	3	4	2	..	..	..	1	..	..	..	..	..	
9	9	0	9	..	1	5	3	..	..	..	..	1	..	..	..	
10	5	0	5	..	1	2	1	..	..	..	..	..	1	..	..	
11	3	0	3	..	1	1	..	..	..	1	..	..	..	..	..	
12	5	0	5	1	2	2	..	..	..	..	..	..	..	..	..	
13	6	1	5	..	..	1	..	1	..	..	1	..	..	1	..	Not stated, 1
14	5	1	4	..	..	..	1	..	..	1	..	1	..	..	..	Not stated, 1
10-15	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	
15	3	1	2	..	..	1	..	..	..	1	..	..	..	..	..	
16	2	1	1	..	..	..	..	..	..	..	1	..	..	..	..	
17	4	0	4	..	1	..	1	..	1	..	..	..	..	..	1	
20	1	0	1	..	..	..	..	1	..	..	..	..	..	..	..	
21	1	0	1	..	..	1	..	..	..	..	..	..	..	..	..	
22	2	2	..	..	..	..	..	..	..	..	..	..	..	..	..	
5th week	1	0	1	..	..	..	..	..	..	..	..	..	1	..	..	
	98	10	88													

TABLE 5.—49 CASES OF POSTOPERATIVE TETANUS AFTER 1890

WITH SPECIAL REFERENCE TO THE ONSET AND ITS RELATION TO THE OUTCOME OF THE DISEASE

Day of onset after operation.	No. of Cases.	Recovery.	Deaths	Day of death. 1	2	3	4	5	7	8	12	16	20	25	
1	0	0	0	..	..	..	..	..	..	..	..	..	..	..	
2	0	0	0	..	..	..	..	..	..	..	..	..	..	..	
3	0	0	0	..	..	..	..	..	..	..	..	..	..	..	
4	2	0	2	1	..	1	..	..	..	..	..	..	..	..	
5	3	0	3	..	3	..	..	..	..	..	..	..	..	..	
6	7	0	7	..	4	1	1	..	..	..	..	..	..	..	Not stated, 1
7	5	0	5	..	3	1	1	..	..	..	..	..	..	..	
8	5	1	4	1	2	..	..	..	1	..	..	..	..	..	
9	11	0	11	2	3	2	1	1	..	..	1	..	..	..	Not stated, 1
10	6	2	4	..	3	..	..	..	..	..	..	..	..	1	
11	2	0	2	..	..	1	..	..	1	..	..	..	..	..	
12	3	2	1	..	..	..	..	..	..	..	..	1	..	..	
13	1	0	1	..	..	..	..	..	..	1	..	..	..	..	
14	1	0	1	1	..	..	..	..	..	..	..	..	..	..	
16	1	0	1	..	..	..	..	..	..	..	..	..	1	..	
19	1	1	..	..	..	..	..	..	..	..	..	..	..	..	
22	1	1	..	..	..	..	..	..	..	..	..	..	..	..	
	49	7	42												

Certainly Richardson's cases, in all of which catgut was employed as a ligature, are very suggestive as to the possibility, at least, of infection through this source. My own case, in which with the same technic a change in the method of preparing the catgut was almost immediately followed by a case of tetanus, is also very suggestive. While the case is not proved, enough evidence has been advanced to make the surgeon more careful than ever as to the asepticity of his absorbable ligature. Certainly it is much easier to render other objects sterile than it is catgut. While it is possible for the infection to be carried to the wound or into the patient's body through some other avenue, in some other way, one has to admit that it is not so probable. Air, dust, water, carious teeth, the patient's skin and other sources of infection have been invoked as carriers by the different authors, but their theories have added little to our exact knowledge of the question.

RELATION OF THE NATURE OF THE OPERATION TO POSTOPERATIVE TETANUS

A study of Tables 1 and 2 will show that the complication is more frequent after operations involving the opening of the peritoneal cavity. Up to 1890 there were 63 cases of ovariotomy followed by tetanus, with 58 deaths and 5 recoveries. Thus this accident followed ovariotomy in over one-half of the cases recorded for this period, while since 1890 only two cases of ovariotomy were followed by tetanus. There would seem to be only one explanation of this decrease, namely, improvement of technic whereby more tetanus bacilli were kept out of the abdominal cavity during the second period. One can not study the reported cases without becoming convinced that, considering the many thousand of abdominal operations, postoperative tetanus is a very rare complication. Modern abdominal surgery exacts such good results from the surgeon, however, that he finds but little consolation from the improvement of general statistics, if he be so unfortunate as to have a case of postoperative tetanus in his own practice. As will be seen by the tables, almost every gynecologic operation has been followed by tetanus. The complication more frequently followed operations involving the opening of the peritoneal cavity. But this is also true of any infection. The variety of abdominal operations followed by tetanus has naturally increased since 1890, on account of the development of new operations since that date. But the ratio between the cases of infection in the peritoneal and non-peritoneal operations is about the same before and after 1890. The natural inference is that since tetanus is a complication of nearly every kind of gynecologic operation the nature of the operation is not a determining factor in its production.

PERIOD OF INCUBATION OF POSTOPERATIVE TETANUS

Lambert, in speaking of tetanus in general, states that the prognosis is "in direct ratio to the shortness of the the incubation period and to the rapidity and intensity of the symptoms." In Table 4, 98 cases have been tabulated according to the onset of the symptoms, the outcome of the cases and the day of death in relation to the day of onset. No patient in this tabulated list received antitoxin, so it serves as a basis of comparison between the value of the two modes of treatment, when antitoxin is administered after the onset of symptoms. Table 4 shows that in 64 out of 98 cases, or in practically two-thirds, the initial symptoms were within the first ten days. In the remaining 34 cases, the onset of the disease varied from the eleventh to the twenty-second day. There was one anomalous case in which there was a five weeks' incubation period, but such cases are unusual and always open to suspicion.

In Table 5, or in the 49 cases after 1890, there were 39 in which the first symptoms appeared within the ten-day period, or practically four-fifths of the cases, figures corresponding to Joseph Jones' statistics as given by Osler. In the remaining ten cases the initial symptoms are recorded as appearing from the eleventh to the twenty-second day.

RELATION OF ONSET OF SYMPTOMS TO DAY OF DEATH

This is irrespective of the treatment administered, although again it must not be forgotten that no antitoxin was administered prior to 1890. Looking at the cases starting within the first ten days, as tabulated in Table 4, we see that up to the ninth day in 50 out of the 98 cases, the patients died on or before the third day. After the tenth day there was not one patient out of the 48 who died on the first day of the disease, the deaths being scattered from the second to the twentieth day. Practically about the same showing is made in the cases occurring after 1890, Table 5. Up to the tenth day the patients died quickly, only a few living beyond the fourth day of the disease. Those with a longer incubation period lived the longest, one even living to the twenty-fifth day. Thus these tables would seem to bear out the claims of various writers, that the shorter the incubation period the more virulent and active is the disease, and, conversely, the longer the period of incubation the milder the disease, or the longer can the patient survive before a fatal issue.

Not a single case of tetanus developed during the first two days after the operation, and in Table 2 no case appeared until the fourth day. In the 98 cases occurring before the year 1890 the maximum number of cases (18) is recorded as developing on the seventh day, while in the 49 later cases the greatest number (11) developed on the ninth day.

TREATMENT

The treatment of tetanus may be summarized briefly as follows:

1. By proper disinfection and drainage at the point of entrance of the tetanus bacilli, we should prevent, as far as possible, further development of bacteria and the absorption of the elaborated toxins.

2. The toxins in the blood which have not united with the nerve cells should be neutralized and rendered inert by the administration of antitetanic serum.

3. The muscular spasms should be controlled by some antispasmodic.

4. Elimination of the poison already absorbed is best obtained by free catharsis and the administration of large quantities of physiologic salt solution.

1. Disinfection and Drainage.—As has been pointed out, this is much more difficult as a rule in postoperative than in traumatic tetanus. The tetanus bacilli may have been implanted on the peritoneum, or may be in the ligature with which a pedicle was tied. There may be no evidence, as far as the wound is concerned, that tetanus bacilli or their spores are present. In many instances it would be obviously jumping in the dark to open up the wound and drain. Yet when the latter suppurates or the proper indications exist, disinfection and drainage should be employed in postoperative as well as traumatic tetanus.

For example, in the case reported, it would have been foolish to reopen the wound, which practically had healed by primary union, when it was not at all certain where the infection had entered. If the wound had suppurated, however, the indications would have been for its early opening, disinfection and drainage.

TABLE 6.—49 CASES OF POSTOPERATIVE TETANUS AFTER 1890

SHOWING EFFECTS OF ADMINISTRATION OF ANTITETANIC SERUM

Day of onset after operation.	No. of cases.	No. of cases having antitetanic serum.	Recovery.	Death.	No of cases not having serum.	Recovery.	Death.
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	2	1	0	1	1	0	1
5	3	2	0	2	1	0	1
6	7	3	0	3	4	0	1
7	5	4	0	4	1	0	1
8	5	4	1	3	1	0	1
9	11	9	0	9	2	0	2
10	6	6	2	4	0	0	0
11	2	2	0	2	0	0	0
12	3	3	2	1	0	0	0
13	1	1	0	1	0	0	0
14	1	0	0	0	1	0	1
16	1	1	0	1	0	0	0
19	1	1	1	0	0	0	0
22	1	1	1	..	..	..	..
	49	38	7	31	11	0	11

TABLE 7.—TIME OF BEGINNING OF TREATMENT BY ANTITOXIN IN 34 CASES

SHOWING RECOVERIES AND DEATHS

Day of beginning antitoxin treatment after onset of tetanus.	No. of cases.	Recovery.	Death.
1	24	5	19
2	6	1	5
3	2	1	..
5	1	..	1
7	1	..	1

In 6 cases in which the patients recovered the tetanic symptoms appeared on the tenth day after the operation or later.

2. Administration of Antitetanic Serum.—It seems to be pretty well established that after the toxins have become fixed in the nerve cells, the administration of antitetanic serum has but little influence on the course of the disease. The injury has already been accomplished and the most that the serum can do is to prevent further combination with the nerve cells. For this purpose and because its proper administration is harmless, it should be given in every case, immediately on the onset of symptoms. Inasmuch as postoperative tetanus is never anticipated, the prophylactic use of the serum has no place in the class of cases under discussion. A comparison of Table 1, in which 101 patients were treated without the antitetanic serum, with Table 6, in which 38 patients out of the 49 were treated with the serum, shows a diminution of the mortality under the use of the serum from 90.09 per cent. to 81.58 per cent. This is not much of a showing; still it is a decided gain. In the 11 cases in which no serum was employed, there was not a single recovery. The good results of the serum may have been due partly to the fact (Table 7) that in 24 of the 38 cases, its administration was begun on the first day of

the appearance of the symptoms. On the other hand, in 6 cases in which the administration was begun on the second day there was only one recovery.

It must not be forgotten, however, that whenever we consider the efficacy of any particular form of treatment we must also consider the severity of the symptoms in the cases under treatment. Thus, the good results may not have been so much due to the antitoxin as to the fact that the cases were of a mild type and the patient might have recovered under any form of treatment. Hence the significance of the note at the bottom of Table 7, which states that in six of the seven patients recovering, the tetanic symptoms appeared on the tenth day after the operation or later.

3. Control of Muscular Rigidity and Spasms by the Use of Antispasmodics.—The list of drugs used for this purpose is large and has not been particularly satisfactory. Opium, chloral hydrate, the bromids, calabar bean, chloroform, etc., have each been tried with varying success. The objections to the use of many of these drugs are that, while they partially control the spasms, they prevent elimination and deprive us of a most necessary form of treatment.

The subarachnoid injections of magnesium sulphate, as first suggested by Meltzer, undoubtedly control the spasms, but respiration is so inhibited at the same time as to make it questionable whether the treatment may not prove worse than the disease.

As regards the use of chloretone, I can only say that it has proved most efficacious in the hands of Dr. Hutchings, who has absolutely controlled the spasms in six cases, while as far as could be judged no bad symptoms developed from the use of the drug. Certainly the effect of chloretone in the case reported above was most satisfactory. The muscular spasms were absolutely controlled after two sixty-grain doses and the muscular rigidity practically abolished. At least, since the drug is harmless, chloretone is worthy of an extensive trial in tetanus and other spasmodic conditions.

4. Elimination Through Free Catharsis and the Use of Salt Solution.—The elimination of the poisons in the body is especially demanded in a disease like tetanus. The tissues may interfere with the administration of cathartics, but in that case they may be introduced through the stomach-tube, after the relaxation has been accomplished through chloretone. Fortunately salt solution can always be administered, either intravenously, subcutaneously or per rectum, the method being determined by the condition of the patient.

CONCLUSIONS

1. While tetanus can not be said to be a very frequent postoperative complication, a study of the reported cases shows it does occasionally follow all kinds of gynecologic operations.

2. It most frequently is a complication of operations involving the opening of the peritoneal cavity, although in quite a percentage of cases it complicates plastic and other non-peritoneal operations.

3. The infection in all probability is introduced at the time of operation.

4. It has been proved that the tetanus bacillus and its spores are most difficult to kill, and that under certain circumstances they survive boiling for sixty minutes; hence when this organism is present more than ordinary heat, applied over a longer time, is necessary.

5. Absorbable ligatures, like catgut, may be carriers of the infection, unless the most approved methods of sterilization be employed.

6. The process of manufacture of the catgut renders it peculiarly liable to infection by the tetanus bacillus, which may not be destroyed by the ordinary methods of chemical sterilization.

7. The initial symptoms of postoperative tetanus appear within ten days in from two-thirds to four-fifths of the cases. The onset of symptoms in the remaining cases varies from the eleventh to the twenty-second day after the operation.

8. In the 150 cases tabulated no case showed symptoms of tetanus the first two days after the operations.

9. From a study of these cases it would seem that the average period of incubation for postoperative tetanus was about eight days.

10. The shorter the incubation period the more virulent and active the disease, and, conversely, the longer the incubation the milder the disease or the longer is it possible for the patient to survive before a fatal issue.

11. Whenever possible the point of entrance of the tetanus bacilli should be ascertained and the proper disinfection and drainage be instituted. This is often difficult in cases of postoperative tetanus.

12. Antitetanic serum acts on the free toxins in the blood, but has no effect on the toxins after they have become fixed in the nerve cells.

13. A study of the tables shows that the mortality of tetanus has been reduced nearly 10 per cent. through the use of the antitetanic serum.

14. The best effects of the serum will be seen when its administration is begun on the first appearance of the symptoms of the disease.

15. Chloretone is able to control the muscular spasms of tetanus and to do away with the muscular rigidity. It is harmless and does not prevent elimination.

16. In tetanus, elimination through free catharsis and the administration of salt solution is of the utmost importance.

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BIBLIOGRAPHY OF CASES

Case.
1. Aspell: Monatschr. f. Geburtsh. u. Gynäk, 1901, xiii, 401.
2. Bach: Gaz. méd. de Strasbourg, 1852, p. 424; Deutsch. Chir., 1886, lviii, 372.
3. Bantock, J. G.: Tr. Path. Soc. London, 1880, xxxi, 7; Med.-Chir. Tr., 1892, lxxv, 154.
4. Baum: Deutsch. Chir., 1886, lviii, 373.
5. Bennett, J. M.: Lancet, London, 1881, ii, 947.
6, 7. Bissell, J. B.: (Two Cases), Philadelphia Med. Jour., 1901, vii, 352-355.
8. Börner: Med.-Chir. Tr., 1892, lxxv, 156.
9. Boinet: Maladies des ovaries, 1877, Ed. 2, table, p. 577; Med.-Chir. Tr., 1892, lxxv, 160.
10. Booth, C. C.: THE JOURNAL A. M. A., 1905, xlv, 42.
11. Brelsky: Deutsch. Chir., 1886, lviii, 371.
12. Brewer: Ann. Surg., 1906, xlvi, 346.
13. Brown, B.: Surgical Diseases of Females, 1856, p. 253 (case 58); Ed. 2, 1861, p. 389 (Case 5).
14. Bueno: Crón. méd.-quir. de la Habana, 1887, xiii, 168; Med. contemp., Lisbon, 1887, v, 179.
15. Buffet: Normandie méd., Rouen, 1888, iv, 357.
16. Callisen, H.: Acta reg. Soc. med. Havn., 1791, ii, 1.
17. Cazkovic, M. V.: München. med. Wchnschr., 1897, xliv, 781; Centralbl. f. Chir., 1897, xxiv, 728.
18. Chadwick, J. R.: Boston Med. and Surg Jour., 1875, xcii, 522.
19. Champneys, F. H.: Hosp. Reg. P. M., No. 382; Med. Chir. Tr., 1892, lxxv, 156.
20. Chavannoz: Wien. klin. Wchnschr., 1902, xv, 272; Soc. d'obst., gyn. et pédiat. de Bordeaux, 1902.
21. Clot-Bey: Schmidt's Jahrb., 1835, i, v, 222.
22, 23. Cole, H. C.: (2 Cases), Am. Gynæc. and Obst. Jour., 1901, xix, 500.
24. Consentino: Ann. di ostet., 1885, p. 389; Med.-Chir. Tr. 1892, lxxv, 156.
25. Dawson: Am. Jour. Obst., 1876, ix, 85.
26. Donand: Bordeaux méd., 1873, ii, 147.
27, 28. Dorsett, W. B.: (Two Cases), Am. Jour. Obst., 1902, xlvi, 620.
29. Fayrer, J.: Ann. Med. Sc., Calcutta, 1870-1, xiv, 237-239.
30. Ferguson: Lancet, London, 1860, ii, 162.
31. Ferrari: Semaine méd., April 13, 1887; Rev. de chir., Paris, 1887, vii, 590; Lancet, London, 1888, i, 212.
32. Ganlez: Bull. Soc. de chir. de Paris, 1878, iii, No. 8; Centralbl. f. Chir., 1878, v, 797.
33. Gay, G. W.: Boston Med. and Surg. Jour., 1876, xcv, 241-243.
34. Gregory, E. H.: Tr. Am. Gyn. Soc., 1877, ii, 317; Deutsch. Chir., 1886, lviii, 373.
35. Gueniot: Gaz. d. hôp., 1877, l. 741.
36. Hammond, L. J.: Am. Med., 1903, v, 963; Am. Gyn., New York, 1903, ii, 368.

37. Hare, A. W.: Brit. Med. Jour., 1884, ii, 652.
38. Helmeke: Schmidt's Jahrb., 1865, cxxx, 298.
39. Helmuth, T.: Homeop. Jour. Obst., 1884-5, vi, 14.
40. Hennig, C.: Med.-Chir. Tr., 1892, lxxv, 135.
41. Hochhalt and Herczel: Semaine méd., 1902, xxii, 86.
42. Horrocks, P.: Med.-Chir. Tr., 1892, lxxv, 135.
43. Howitz: Jahresb. ü. d. Leistung. in d. ges. Med. (Virchow and Hirsch), 1875, ii, 570.
44. Humphrey, G. M.: Tr. Am. Gyn. Soc., 1877, ii, 317-323.
45-48. Jerie, J.: (Four Cases), Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1908, xix, 282.
49. Johnson, J. T.: Ann. Gyn. and Pediat., 1888-9, ii, 543.
50, 51. Kaltenbach, R.: (Two Cases), Tr. Am. Gyn. Soc., 1877, ii, 317.
52. Kammerer, F.: Ann. Surg., 1906, xliv, 352.
53, 54. Kimball, G.: (Two Cases), Tr. Am. Gyn. Soc., 1877, ii, 317; Boston Med. and Surg. Jour., 1874, xc, 517 (Case 3).
55. Koch, E.: München. med. Wchnschr., 1898, xlv, 1036; Deutsch. Ztschr. f. Chir., 1898, xlviii, 417.
56. Kötschau, J.: München. med. Wchnschr., 1887, xxxiv, 855.
57. Kopf: Allg. Wien. med. Ztg., 1858, iii, 154.
58. Langenbeck: Deutsch. Klin., 1852, iv, 8, 21.
59. Leopold: Centralbl. f. Gynäk., 1903, xxvii, 555.
60. Macartney, D.: Lancet, London, 1896, i, 157.
61. Malins, E.: Brit. Med. Jour., 1881, i, 509.
62. Martin, E.: Centralbl. f. Gynäk., 1906, xxx, 395.
63, 64 Melnert: (Two Cases), Arch. f. Gynäk., 1893, xliv, 381.
65. Menzer: München. med. Wchnschr., 1900, xlvii (2), 1756.
66. Mensel: Deutsch. Chir., 1886, lviii, 370.
67. Meyer, W.: Ann. Surg., 1905, xlii, 458.
68. Mikschik, F.: Schmidt's Jahrb., 1854, 11, lxxxiv, 298.
69. Mudd, H. G.: Ann. Surg., 1906, xliv, 358.
70. Müller, P.: Med.-Chir. Tr., 1892, lxxv, 135.
71. Nélaton: Med.-Chir. Tr., 1892, lxxv, 135.
72. Nott, J. C.: Med. Gaz., New York, 1867-8, i, 367.
73, 74. Olshausen, R.: (Two Cases), Med.-Chir. Tr., 1892, lxxv, 154.
75. Palfrey: Obst. Jour., Gr. Brit., 1880, viii, 672.
76. Paolini, M.: Schmidt's Jahrb., 1836, Suppl. 1, p. 253.
77. Parker, R.: Lancet, London, 1901, i, 709.
78. Parvin, T.: Tr. Am. Gynec. Soc., 1877, ii, 317-323.
79. Penrose, C. B.: Ann. Surg., 1898, xxvii, 231.
80. Peterson, R.: Am. Jour. Obst., April, 1909, lix, 658.
81. Phillips, J.: Med.-Chir. Tr., 1892, lxxv, 135.
82. Porter: Am. Jour. Surg., July, 1876; Ann. Surg., 1906, xliv, 360.
83. Rambaud: New York Med. Jour., 1898, lxviii, 884.
84-86. Reynier, P.: (Three Cases), Bull. et. mém. Soc. de chir. de Paris, 1902, xxvi, 647; Rev. de chir., 1901, xxiv, 104; Arch. f. klin. Chir., 1904-5, lxxv, 141.
87, 88. Richardson, M. G.: (Two Cases), Brit. Med. Jour., April 17, 1909, p. 948.
89. Roe, W. J.: Ann. Surg., 1906, xliv, 355.
90-93. Rose, E.: (Four Cases), Deutsch. Chir., 1897, viii, 275, 276, 277.
94. Salmon: Med.-Chir. Tr., 1892, lxxv, 154; Maunowry. in Thiriar's paper, p. 102 (Case 40).
95. Sarrel: Deutsch. Chir., 1886, lviii, 372.
96-100. Savage, T.: (Five Cases), Med.-Chir. Tr., 1892, lxxv, 154.
101. Schatz: Med. Chir. Tr., 1892, lxxv, 156.
102. Shaw, C. K.: Month. Homeop. Rev., London, 1899, xliii, 149.
103. Shultenaf, M. W.: Finska läk-sallsk. handl., 1881, xxiii, 386-389.
104. Simpson, J. Y.: Selected Obstetrical and Gynecological Works, 1871, p. 570.
105. Slawjanski, K.: Med.-Chir. Tr., 1892, lxxv, 152.
106-114. Stilling: (Nine Cases), Deutsch. Klin., 1867, xix, 97, 112, 144 (Case 11); ibid., 1866, xviii, 38, 46, 58, 73 (Case 10); ibid., 1867, xix, 204, 213, 227 (Case 12); ibid., 1868, xx, 181 (Case 16); ibid., 1872, xxiv, 396 (Case 25); ibid., pp. 418, 428, 437 (Case 27); ibid., 1869, xxi, 241; Tr. Am. Gynec. Soc., 1877, ii, 317.
115-118. Thiriar: (Four Cases), Gaz. d. hôp., 1886, lix, 123; Compt. rend. du Cong. franç. de Chir., Paris, Session 2, 1886, p. 97 (Obs. I. Case 40); p. 98 (Obs. ii, iii, iv); Med.-Chir. Tr., 1892, lxxv, 156.
119. Thomas: Tr. Am. Gynec. Soc., 1877, ii, 317; Am. Jour. Obst., 1879, xii, 600.
120. Thompson, H.: Lancet, London, 1900, i, 157.
121. Thompson, F. D.: Tr. South. Surg. and Gynæc. Assn, 1897, Philadelphia, 1898, x, 148.
122. Tilanus: Deutsch. Chir., 1886, lviii, 371.
123. Tirzoni, G., and Parona, F.: Ann. univ. di med. e chir., 1877, ccxxxix, 193; Centralbl. f. Chir., 1877, iv, 461.
124. Torneau: Deutsch. med. Wchnschr., 1904, xxx, 347.
125, 126. Ulbrich, C.: (Two Cases), Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1902, x, 70 (Cases on pp. 131 and 132).
127, 128. Underhill, T.: (Two Cases), Brit. Med. Jour., 1881, i, 807.
129. Verneuil: Bull. de l'Acad. de méd., 1893, xxix, Series 3, 628 (Case 4, p. 632).
130. Warbasse: Ann. Surg., 1906, xliv, 346.
131. Wanthy: Jour. de méd., Brussels, December, 1875, p. 522.
132. Weir, W.: Glasgow Med. Jour., 1830, iii, 430.
133-137. Wells: (Five Cases), Med. Times and Gaz., 1859, ii, 589; Lancet, London, 1859, ii, 618; Diseases of the Ovaries, London, 1865, p. 35; Med.-Chir. Tr., 1892, lxxv, 150.
138. Wetrh: Register Kiel Jour., 9598, p. 49; Med.-Chir. Tr., 1892, lxxv, 154.
139-143. Wilms: (Five Cases), Deutsch. Chir., 1897, viii, 271.
144. Winterbotham: Brit. M. J., 1867, i, 690.
145. Wood, H. C.: Univ. Med. Mag., Philadelphia, 1897-9, x, 608.
146. Yahoub: Gaz. méd. d'Orient, Constantinople, 1906-7, ii, 201.
147-148. Zacharias, P.: (Two Cases), München. med. Wchnschr., 1908, lv, 227.
149-150. Zweifel: (Two Cases), Berl. klin. Wchnschr., 1881, xxviii, 305; Med.-Chir. Tr., 1892, lxxv, 152.

OTHER REFERENCES

Kitasato: Ueber den Tetanuserreger, Ztschr. f. Hyg., 1889, vii, 225; Deutsch. med. Wchnschr., 1889, xv, 635.
Kuhn, F.: Die postoperativen Fälle von Tetanus von Zacharias, Fälle von Katguttetanus. Bemerkungen zur Arbeit von Zacharias. München. med. Wchnschr., 1908, lv, 628.
Osler, W.: Practice of Medicine, 1903, Ed. 5, p. 231.
Smith, T.: Some Neglected Facts in the Biology of the Tetanus Bacillus, Tr. Chicago Path. Soc., March 1, 1908, vii, 1.

ABSTRACT OF DISCUSSION

DR. W. B. DORSETT, St. Louis: In the consideration of this subject, whether it is kangaroo tendon or catgut, we ought to consider the size of the material used; for any size above No. 3 is liable to have in the center of the strand the infectious material. In other words, the manufacturer of this gut will admit that it is harder to sterilize a large strand than a small strand. Experiments have been made in which the gut has been suspended in anilin dye and sections taken showed that the anilin dye does not always penetrate to the center. The unfortunate cases that I have had prove rather conclusively that the infection did not occur from the catgut that was used, but from the kangaroo tendon. This was of a large size and the postmortem showed that it contained the tetanus bacillus and the spores. At that time I had quite a supply of suture material that I had obtained from the manufacturers. Immediately after a second case occurred I telegraphed them to call in all the gut that they had sent out and that the kangaroo was probably infected. I got no response until the agent came to St. Louis for the purpose of disposing of his material and he then found that it was not wanted in the instrument houses. Chloretone is new to me. The antitetanic serum in my opinion should be used as a prophylactic rather than as a remedy after the disease has once shown itself. So much impressed have been some of my friends who do general surgery with the use of antitetanic serum, that as soon as a punctured wound is discovered in persons working about stables or coming in close contact with street dirt, the serum is used as a prophylactic before anything else is done. In my two cases it had no effect as it was not used in time, and the chloroform was used simply to control the spasms.

DR. RALPH WALDO, New York: I have seen four of these cases. Three followed abdominal operations. The material used as suture and ligature was catgut of rather large size for the adnexa which were removed. In one case a large ovarian tumor was removed. The more superficial portions of the wound were closed with silkworm gut. Whether the infection was due to the fact that the catgut was of rather large size I am unable to say. In two of these cases I performed several operations in the same operating-room at the same hour with the same assistants and using the same material. From the tenth to the twelfth day the first slight symptom appeared in the neck. No notice was taken of it until about the thirteenth or fourteenth day. The most exhaustive bacteriologic examinations were made of the catgut and everything else possible with a negative result. I speak now of three of the cases. I went very carefully into the serum question and became thoroughly convinced that if the serum was given after the disease had developed it was useless in a very large percentage of cases. My laboratory friends had used it in guinea-pigs and found that if it were used as a prophylactic the disease was prevented. If it were used after the symptoms developed, as much serum were required as the guinea-pig weighed in order to counteract the toxin. For this reason its use was impracticable. In another case a patient with uterine hemorrhage was given a hypodermic of ergot supposed to be sterile. She was brought to the hospital in the ambulance and later developed tetanus. We found a little bleb where the hypodermic had been given. This was opened and found to be full of the germs of tetanus, proving that the disease was caused by the hypodermic, whether the germ was on the skin or on the needle no one knows. In three other cases we were absolutely unable to determine anything concerning the entrance of the germs.

DR. W. H. HUTCHINGS, Detroit: The question of postoperative tetanus is so large that it cannot be given full consideration in the time at our disposal. However, I desire to call attention to the fact that surgeons, when anything goes wrong, are altogether too ready to blame catgut. They forget that catgut can be sterilized, no matter how large it is, and forget that the patient's skin and their own hands are not so easily made sterile. There are undoubtedly cases in which the catgut has been the cause of tetanus and quite as many cases in which the catgut has been sterile, and cases in which catgut was not used at all. Unfortunately, Dr. Peterson had no cultures made, so we do not know whether his cases were

those of tetanus or not. The question of treatment is a very important one. As Dr. Peterson says, the mortality is about 80 per cent. It has been lowered somewhat. For several years I have been conducting a series of experiments on sheep to study the methods of treatment that have won any recognized place. An important statement was made in a paper by Dr. Matas, at the recent meeting of the American Surgical Association, calling attention to the fact that often tetanus spores are taken into the body with salads and fruits, and eliminated in the feces, and that a large percentage of postoperative tetanus is found in cases in which the parts have been contaminated in that way; notably in the operation with clamp and cautery in hemorrhoids. I have become convinced that the best way to control the manifestations of the disease is by the use of chloretone. For the cure of the disease we must remove the source of the manufacture of the toxins. The toxins in the body are better neutralized by the antitoxin if it is used intravenously, though the antitoxin has no effect whatever if the toxins are already in contact with the nerve cells. The first problem is to keep the patient alive until the toxins can be overcome. I have treated six tetanus patients with chloretone for the control of the convulsions and have cured five of them. One was a case of abortion induced by curettement in which tetanus developed in six days. One case was a Fourth-of-July accident. Another case was that of a man who had a severe crushing injury to the hand. Several operations were done but the flaps sloughed and tetanus developed. Another case developed from fracture of the elbow. The man could not swallow. The serum was given and he was also given large doses of chloretone. He was so completely relaxed that all one night a nurse had to sit by the bed to hold his jaw forward so that he could breathe. Chloroform kills by paralysis of the center of respiration. Chloretone will control the convulsions, but that is all it will do. It is comparatively harmless. In one case a man took a large dose with suicidal intent. He slept for a week, woke up, and said he felt perfectly well.

DR. H. J. BOLDT, New York City: I have been unfortunate enough to lose two patients as the result of tetanus. An examination of the catgut gave a negative result. Then I had some catgut from the same manufactory infected with tetanus and anthrax bacilli. The catgut was untwisted and the infection made in the center of the gut, which was No. 3. The tubes were sealed in the presence of the bacteriologist. The manufacturer then put them through the same process as all the other catgut underwent, and it was then returned to our bacteriologist. A careful examination was made and it was found to be absolutely sterile. So that settles the question that my patients did not die from infection in the catgut. One case was a large ovarian tumor; the other a large fibromyomatous uterus.

DR. W. H. HUTCHINGS: Regarding the work of Wassermann, I should like to call attention to the fact that Villard has reported thirty-one cases of undoubted tetanus following the prophylactic use of serum.

DR. C. C. FREDERICK, Buffalo: I want to report a case of postoperative tetanus, the only one I ever had, which occurred in my hospital last September. It was a perfectly clean case of myofibroma for which I did supravaginal hysterectomy, the wound closing by primary union. The patient developed tetanus on the sixteenth day. I was doing a lot of work at the time. I have continued to use the catgut prepared by the iodin method. I operated on three patients on the same day that this woman was operated on and the others did not develop tetanus. I suppose that my catgut might have been the cause, though I doubt it very much. This patient did not develop tetanus until the sixteenth day after operation. The largest catgut used was No. 2. About five days prior to the beginning of the tetanus the woman had an attack of acute indigestion with diarrhea, furred tongue, elevation of temperature, etc. After two days with catharsis and withholding of food she recovered. The woman was very fond of fruits and vegetables. The attack occurred in September at a time when she was eating a great many of these things, and I have an idea that she was infected from the intestinal tract.

DR. REUBEN PETERSON, Ann Arbor: In the time permitted I could only read my paper in abstract. About everything brought out in the discussion appears in the body of the paper and I would refer those interested to the paper itself. I am not trying to prove anything at all. I would much rather not have it proved that catgut is the source of infection. After a period of seven or eight years with the use of one catgut I changed to another sterilized by a different method and this case of tetanus developed. That is enough proof for me so far as my own surgical practice is concerned. It is difficult to prove that the catgut is at fault. It has been shown that only one fiber of the catgut need be infected. Such infection cannot be very common, because if it were, we would get all sorts of infections throughout the world when so much catgut is being used. If I have pointed out the possibility of tetanus following clean operative cases and shown the importance of careful supervision of the sterilization of catgut, I shall have accomplished my purpose. Of course we know the value of the serum as a prophylactic measure, but it must be remembered that we do not give all our operative patients antitetanic serum lest they have tetanus. The serum does neutralize the toxins as Dr. Hutchins has pointed out, and therefore should be used in the treatment in every case. Very seldom, I think, does tetanus develop from infection on the hands. If we look at the different methods of sterilization of hands, instruments and of all materials connected with the operation and see how few cases of tetanus develop, it must be very rarely that the source of infection is there. However, the infection is much more common than one thinks, as evidenced by the twenty cases of Richardson and the fifty cases since 1890 which I have collected. Chloretone, of course, is used merely as an antispasmodic, and is much safer and more effective than chloral or other drugs which have hitherto been employed. It acts so beautifully in relaxing the muscular spasm that I would advise any one so unfortunate as to have a case of tetanus, postoperative or otherwise, to give it a fair trial. It was extremely gratifying to note the relaxation of the muscles and the ability of the patient to open her jaws, following a dose of 50 grs. of chloretone.

CAUSES OF FAILURE IN THE TREATMENT OF CANCER OF THE LIP

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The frequency with which recurrent and far-advanced cases of lip cancer have of late come to my notice has induced me to study the causes of failure in the treatment of lip cancer and to present the principal findings in this short paper, trusting that some fact might be brought forward which would impress on the profession the importance of early recognition and radical excision of the disease. I am confident that in many cases the patient's refusal to accept the advice of the medical attendant is responsible for the distressing results; in a few cases the disease is not recognized until a mutilating operation is necessary, while in other instances the surgeon has limited the operation to mere excision of the palpable growth. The secret of success in the treatment of lip cancer lies (1) in early recognition of the disease —recognition before the glands are palpably enlarged— and (2) in excision of the lymphatic glands and periglandular tissue of both sides of the neck, together with the primary growth.

In many of the early cases the treatment advocated will seem somewhat too radical. Experience, however, has demonstrated that the size of the ulcer can never be trusted to indicate the degree of spread in the parts beneath. It is equally true that the glands of the neck may be enlarged and yet not contain cancer cells. Wartmann found infection of the lymph glands in eighty-four

of his one hundred collected reports of cases. Loos believes that it may occur as early as the third month after the commencement of the disease, although in one of Wartmann's cases the glands were involved at the sixth week.

Cheatle has found that there are three anatomic conditions which complicate the spread of cancer of the upper lip: 1. The early spread to the alveolar margin of the upper jaw, particularly when the disease begins or spreads into the central part of the lip. 2. When cancer begins in the upper lip, the columella is earlier invaded than the alæ nasi. 3. The cutaneous muscles of the upper lip are not less important in conducting the spreading disease than the cutaneous muscles elsewhere in the face.

Since the lymphatics of the lip empty into the submentals and glands seated in the submaxillary fossa, the findings of Stieda are important. Stieda has found that the glands seated in the submaxillary fossa are in most instances to be found at three perfectly determined points. The median is in relationship with the facial artery and is situated between the lower border of the lower jaw and the submaxillary gland. The anterior gland, which is the smallest, is to be found on the border of the anterior belly of the digastric, in front of the mylohyoid and beside the submental vessels. The posterior is situated at the posterior aspect of the submaxillary gland. A larger number of glands may be present. The submental glands are equally important; they are represented by all the glands which are to be found between the chin and the hyoid bone, between the anterior bellies of the digastric. The lymphatics of the upper lip not only empty into the glands already mentioned, but also into the superficial cervical as well; they are four to six in number, ar[illegible]e disseminated along the external aspect of the sternocleidomastoid, along the posterior border of the muscle and in the lower part of the subclavicular triangle. They are grouped around the external jugular vein and are covered by the superficial cervical fascia. The deep cervical glands also receive the lymphatics of the lips. Princetaux found that the lymphatics of the upper lip may pass through a buccinator group (which was present in ten of thirty-two cases) before emptying into the submaxillary glands.

Handley has recently attempted to establish the unrecognized law that every aggregation of carcinoma cells has a definite life-cycle, and, after increasing in size for a varying period and at a varying rate, tends spontaneously to undergo degenerative and fibrotic changes. He believes that the natural history of cancer is one of centrifugal growth followed by centrifugal death. His researches have shown that the permeation of a lymphatic is normally followed by a curative process of fibrosis. The cancer cells, which at first fill the lymphatic without distending it, by their continued proliferation finally burst the tube of endothelium within which they are enclosed. Around the split lymphatic some extravasation of blood usually takes place, and a dense aggregation of lymphocytes appears. Soon the lymphocytes are replaced by young fibrous tissue, which forms an adventitious sheath for the cylinder of cancer cells set free from the burst lymphatics. This newly formed fibrous tissue contracts on the degenerate cancer cells and they ultimately disappear. The original lymphatic is now represented by a solid thread of fibrous tissue, and the process of natural cure is locally complete. In carcinomas whose cells possess a high degree of proliferative power the life of the patient is destroyed while the cancer is still in the early stages of its life-cycle. At the other end of the scale, in carcinomas of low proliferative power, the patient may possibly survive the carcinoma.

Microscopic studies have shown that the lymphatic vessels proceeding from the affected area to the lymphatic gland, as well as the vessel leading from such a cancerous gland, may also contain cancer cells.

Bonney has recently established the new and important fact that a local increase in the cellularity of the subepithelial connective tissues, accompanied also by a destruction of the elastic tissue, invariably precedes the appearance of a carcinoma.

The one point that I want to emphasize in the diagnosis of cancer of the lip is the fact that every fissure or crack of the lip in a middle-aged person which refuses to heal or which heals and reopens repeatedly should be regarded as a beginning cancer. In all doubtful cases the lesion should be excised and subjected to microscopic examination. The common practice of treating these lesions with salves and powders, or by cauterization until a mere tyro could make the diagnosis, is to be deplored.

The mortality from cancer of the lip is not infrequently the mortality of inefficient treatment and delay. With early recognition of the disease and proper treatment the mortality should not be more than 2 per cent. In 1889 Roger Williams studied 100 cases of lip cancer admitted to Middlesex Hospital and found that in 19 fatal cases the total duration of life, dating from the time when the disease was first noticed, averaged 37.7 months; in 7 cases, in which no operation was done, the average duration was 16 months, while in 12 cases with operation the average duration of life was 50.5 months. In 46 recurrent cases Roger Williams found that the average interval between the first operation and the first obvious recurrence in 41 cases was 20 months; in 13 of the 46 cases the initial seat of the recurrence was in the adjacent lymphatic glands, while in 33 it was at or near the primary seat of the disease.

In 1903 Crile collected reports of 535 cases of lip cancer, with operations prior to 1885. The operative mortality was 8 per cent.; recurrence, 37 per cent.; three-year cure, 27 per cent. In 1898 Loos collected 260 cases, with operations since 1885. The operative mortality was 6 per cent.; recurrence, 30 per cent.; three-year cure, 65 per cent.

In 1896 the American Surgical Association, realizing the inefficacy of simple V-shaped excision of the growth on the lip, undertook to find what further steps could be taken in the operative technic for the cure of the disease so as to prevent recurrence. After careful study and investigation the association advocated excision of the glands in the submental and submaxillary regions.

In the light of Handley's investigations and the extensive experience, the treatment of cancer of the lip is clear. The secret of success lies in early and complete removal of the growth on the lip and of the glands of the submental and submaxillary fossæ. Everything must be done at the primary operation. The technic which seems best is as follows: For two or three days before operation the patient is given mouth-wash and the teeth cleansed three times daily. Under ether anesthesia a collar incision is made and the glands in the submental and submaxillary regions, together with the adipose tissue, are excised. Drainage through two small supplemental incisions is provided for. The wound is then sutured and protected with gauze pads, which latter are held in place by an assistant while the growth on the lip is being removed and the parts sutured. In my own

cases the entire wound surfaces are swabbed with Harrington's solution and then with salt solution before being sutured. The drains are removed on the second day. The patient is permitted to leave his bed on the fourth day.

In a recent monograph attention was called to the value of Harrington's solution in the prevention of cancer cell implantation. It is not to be inferred that Harrington's solution is brought forward as a substitute for radical removal of all of the diseased tissue. On the contrary, it is offered as a valuable adjunct in preventing liberated cancer cells from developing into cancerous growths in the operative wound. At this time I wish to caution against applying the solution too long. Experience has convinced me that it is best applied by means of a gauze sponge wrung out in the solution. The sponge should be applied to the entire wound area. The operative field quickly assumes a brownish-blackish appearance. A small rubber tissue drain should be placed in the lower angle of the wound. The drain is removed at the end of thirty-six hours.

The following conclusions seem warranted:

1. The causes of failure in the treatment of cancer of the lip are (1) late recognition of the disease, (2) the patient's refusal of early operation, and (3) incomplete operative technic.

2. The common practice of treating cases of persistent "fissure" or "crack" of the lip in a patient 30 years of age or over, with pastes, caustics or powders, is to be deplored. The fissure or crack should be excised and immediately subjected to microscopic examination.

3. The secret of success lies in early recognition and prompt excision of the growth, together with contents of submental and the submaxillary fossæ. The character and completeness of the primary operation determine the success or failure of the treatment.

4. Moles and warts, especially when so situated that they are subjected to more or less constant irritation, should be excised, lest they become malignant.

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THE ASSOCIATION OF AORTIC INSUFFICIENCY WITH SYPHILITIC AORTITIS *

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During the last few years our attention at the Pennsylvania Hospital has been very forcibly directed at autopsy to the frequent association of a peculiar type of arteriosclerosis, namely, mesaortitis, with a chronic aortic endocarditis, which gave rise to aortic insufficiency. The combination of these two lesions seemed so significant and was so striking that a systematic study of the autopsy material was undertaken to determine exactly how common the occurrence was; and in this paper a brief summary of the findings will be given.

For some years mesaortitis has been recognized by the school of Heller as a unique form of arteriosclerosis, but more recently the condition has been made especially familiar and its connection with syphilis emphasized by the studies of Marchand,[1] Benda[2] and Chiari.[3] Chiari pointed out in 1903 that mesaortitis was very common in syphilitics. In his series of twenty-seven cases of undoubted syphilis, mesaortitis was found sixteen times, and in forty-four cases of paresis it occurred in 47 per cent. Marchand, at the same time, drew attention to the constant association of mesaortitis with aneurism of the aorta and believed that, though this type of aortitis might not be specific for syphilis, was yet almost always caused by syphilis when it occurred in young people. Since the appearance of these papers the condition has been extensively studied and is now generally recognized as a type of sclerosis differing in appearance and etiology from the more usual form of sclerosis termed endarteritis deformans.

Evidence, too, has been rapidly accumulating to show that mesaortitis is due, at least in many cases, to syphilis. A similar lesion has been found by Wiesner[4] and Klotz[5] in the great vessels of infants and fetuses that were the subjects of congenital syphilis. Most important of all in this regard are the reports of Reuter,[6] Benda,[7] Schmorl[8] and Wright,[9] who have been able to demonstrate spiral organisms indistinguishable from *Spirochæta pallida* in mesaortitis in adults. It is interesting to note in Wright's excellent and convincing report that chronic aortic endocarditis was present in all of the five cases in which spirochetes were present in the wall of the aorta.

In a series of 930 autopsies at the Pennsylvania Hospital twenty-one cases were found in which chronic aortic endocarditis, unassociated with lesions of any of the other valves, occurred in connection with mesaortitis. In these twenty-one cases the lesions in the aorta varied somewhat in extent in the individual instances, but was always confined, and often very sharply localized, to the arch of the aorta. Occasionally it extended for only 5 cm. above the aortic cusps. The margin of the sclerotic area was very abrupt, while the aorta beyond was quite smooth. In the least extensive areas there were patches of thickening two to three cm. in diameter. The central portion was elevated, gray and somewhat succulent in appearance, while the margins were yellowish and crinkled. The sclerosis, when more extensive, was characterized by an irregular, corrugated or crinkled thickening of the wall, showing small pits and sometimes minute, aneurismal sacculations. Often the bases of these small aneurisms were so thin that they transmitted light. There was no calcification except in one instance, but rather a rubbery, pliable thickening. In four cases the arch of the aorta was the seat of large aneurism formations.

The valves showed the same rubbery thickening when extensively involved, and occasionally there were crescentic lines of whitish yellow thickening on the endocardium of the ventricle beneath the valves.

Microscopically these aortas showed even a more characteristic appearance than they did to the naked eye. The intima presented various grades of thickening, due to the heaping up of cells of the connective-tissue type, but there were no marked degenerative changes and no calcification. The principal alterations were present in the media. Here there were, in the great majority of instances, areas of necrosis in which both muscular and elastic elements were completely destroyed, while with occasional giant cells accumulations of small round cells

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1. Marchand: Verhandl. d. deutsch. path. Gesellsch., 1903, p. 197.
2. Benda: Verhandl. d. deutsch. path. Gesellsch., 1903, p. 164.
3. Chiari: Verhandl. d. deutsch. path. Gesellsch., 1903, p. 137.
4. Wiesner: Centralbl. f. Path. u. path. Anat., 1905, xvi, 822.
5. Klotz: Jour. Path. and Bacteriol., 1907, xii, 11.
6. Reuter: München. med. Wchnschr., 1906, liii, 10, 778; Ztschr. f. Hyg. u. Infectionskrankh., 1906, liv, 49.
7. Benda: Berl. klin. Wchnschr., 1906, xliii, 989.
8. Schmorl: München. med. Wchnschr., 1907, liv, 188.
9. Wright: Boston. Med. and Surg. Jour., 1909, clx, 539.

and plasma cells were sometimes arranged about the necrotic areas. Usually blood-vessels, surrounded by these same types of cells, were seen penetrating from the adventitia far into the media toward the thickened intima. In other instances the media was the seat of old scar-like areas containing blood-vessels and the connective tissue was richly infiltrated with plasma cells and small round cells. In such places the elastic fibers of the media, as could be shown by Weigert and Verhoff stains, were entirely destroyed and the adventitia and thickened intima were connected by the vascularized scars. In the oldest lesions the media was represented simply by slightly cellular bundles of connective tissue. The adventitia likewise was the seat of definite changes. Here the connective tissue was increased; collections of small round cells were present, situated especially about blood-vessels, the arteries were frequently the seat of an extensive endarteritis and the walls of the veins thickened.

In three cases in which the valves themselves were studied microscopically this process was seen to extend to within a short distance of their attachment. At the fibrous ring there was increase in connective tissue, and blood-vessels could be seen extending from this region, while into the thickened valve near them accumulations of small round cells and plasma cells infiltrated the fibrous tissue of the ring. The valves themselves were thickened by the formation of fairly cellular connective tissue, and near the bases, two valves were infiltrated with clusters of small round cells and plasma cells.

From this brief description it may be seen that the lesions in the aorta in these cases were quite characteristic of aortitis as it has been described by others. The process, moreover, could be traced along the wall of the aorta to the aortic cusps and, though, by reason of their structure, one could not expect to see the same type of lesion in the valves, still it was possible to determine that certain of the features characterizing mesaortitis were present here. The extension of blood vessels and groups of small round cells and plasma cells from the fibrous ring into the base of the leaflet, as well as the presence of small groups of these cells in the substance of the valve itself, was quite striking in at least one case, and, though this is not, by any means, sufficent to characterize the lesion in the valves as specific, still it does suggest that the agent which produced the chronic inflammatory and proliferative changes in the wall of the aorta had some part in the disease of the aortic valve.

It is quite evident, too, that lesions of the aortic valve accompany mesaortitis with great frequency, for in another series of thirty-seven cases of mesaortitis, in which special attention was paid to the lesion in the aorta, chronic aortic endocarditis with insufficiency occurred thirteen times, or in 35.1 per cent.

In the series of twenty-one cases under consideration all but three of the subjects presented definite signs of aortic insufficiency during life. In one case, a man who died shortly after admission to the hospital from epidemic meningitis, no cardiac murmurs were heard, and in two other instances only apical systolic murmurs were noted at the physical examination. Most of the individuals were middle-aged or young. In 17 cases the patients were under 50, in 11 under 40 and in 6 between 20 and 30 years of age. Fifteen of the patients were men, 6 were women; 14 were colored and 7 white. In 11, or a little over half, there was a definite history of syphilis or syphilitic lesions (gummata) were discovered at autopsy. In the remaining 10 cases the possible occurrence of syphilis was not noted in the history.

Although a history of rheumatic fever was obtained in a few instances, it was, on the whole, rather conspicuous by its absence. In 8 cases it was stated positively that the patient had not had rheumatism; in 3 cases there had been "rheumatic pains," and in 3 cases there was a definite history of rheumatic fever. In 6 cases the history was not taken with sufficient accuracy to determine whether or not the patients had had rheumatism.

To determine the relative importance of the association of mesaortitis with aortic insufficiency it was necessary to compare these twenty-one cases with all the other cases of chronic aortic endocarditis, and particularly with those cases which were associated with endarteritis deformans and calcification of the aorta.

Including the above group, 76 cases of chronic aortic endocarditis were found in the 930 autopsies.

In twenty-one of these cases the aortic valves were affected in combination with the mitral or tricuspid valves, and frequently an aortic insufficiency was combined with mitral stenosis or mitral insufficiency. In most of these 21 cases the disease occurred in young people and in a large proportion the disease could almost certainly be ascribed to rheumatic fever. Since this group of cases in which there are combined lesions of the mitral, aortic and often tricuspid valves is perfectly familiar, the subject needs no further discussion. Suffice it to say that the aorta in every instance was smooth and delicate in appearance, so that the possibility that a sclerosis might have had some effect in bringing about the lesion of the aortic valve is effectually excluded.

In the remaining thirty-four cases of chronic aortic endocarditis in which there was no mesaortitis, the aortic valves alone were affected and showed changes varying from a moderate thickening to a marked thickening, stiffening and calcification. In all but nine of the cases there was sclerosis of the root of the aorta, consisting of patches of yellow thickening of the intima which often showed degenerative change and calcification. Frequently the calcification was very well marked. The lesions were not confined to the root of the aorta, but often were much more advanced in the thoracic and especially the abdominal portion. In most instances the patients were elderly individuals; twenty-two, or 66.6 per cent., were over 50, and twenty-eight were over 40 years of age. In one instance the age of the patient was not given.

The condition noted in this group of cases is so familiar and is found so frequently in autopsies on old men and women that it needs scarcely any comment. Clifford Allbutt,[10] contrary to the opinion which is often expressed, has stated that aortic insufficiency is not essentially a disease of old age and that it is of rather exceptional occurrence in the decay of life. The present records are in accord with this view, for in only four of the thirty-four cases, or 11.9 per cent., were there signs of aortic insufficiency during life. In two of these cases there was calcification of the aorta. One of the cases, which occurred in a man aged 46 who had had syphilis, has been placed in this group, though the exact type of sclerosis of the aorta is doubtful, owing to the fact that no tissue was preserved for microscopic study. The aorta showed areas of calcification, which is so unusual in mesaortitis that, without more definite knowledge, the case cannot be considered as belonging to the cases of mesaortitis. In one other case no cardiac murmurs were heard during life, the patient lived but a short time after admission to the hospital, but at autopsy there was

10. Allbutt, Clifford: System of Medicine, Diseases of the Aortic Valves.

found a markedly dilated heart and rather extensive thickening of the aortic valves. The aorta showed advanced calcification. From the extent of the aortic lesion it seemed very probable that if the heart had been examined before the break in compensation the murmurs of aortic insufficiency might have been present.

As might have been supposed, however, systolic murmurs, heard with varying intensity either at the apex or base of the heart, were common in this group and occurred in thirteen cases. It will thus be seen that, while thickening, stiffening and calcification of the aortic valves frequently goes hand in hand with calcification of the aorta and endarteritis deformans, these changes seldom gave rise to true aortic insufficiency.

In the accompanying table the cases of chronic aortic endocarditis are tabulated and show definitely the comparative frequency of the combination of aortic insufficiency and mesaortitis.

AORTIC INSUFFICIENCY AND MESAORTITIS

	Mesaortitis (Pure Aortic Endocarditis).	Endarteritis Deformans (Pure Aortic Endocarditis).	Rheumatic Fever, Etc. (Combined Aortic Endocarditis).
Aortic insufficiency	18	4	21
Chronic aortic endocarditis without signs of aortic insufficiency	3	30	00
Total	21	34	21

It may thus be seen that of the 43 cases of true aortic insufficiency giving symptoms, 18, or 41.8 per cent., were associated with mesaortitis, and of the 22 cases of aortic insufficiency uncombined with lesions of any of the other valves 18, or 81.5 per cent., were associated with mesaortitis.

It is a matter of common knowledge that syphilis is an important factor in the etiology of aortic insufficiency, but until recent years it has been difficult to prove this matter satisfactorily and to determine in exactly what proportion of cases the condition could be ascribed to syphilis. Siehe and Saathoff[11] have recently called attention again to the frequent association of syphilis and aortic insufficiency. In 7 cases of aortitis luetica which they report aortic insufficiency was present in 6. Albrecht[12] believed, too, that syphilis is the most important cause of aortic insufficiency. Citron,[13] investigating this same point, obtained a positive Wassermann reaction in ten out of sixteen cases of aortic insufficiency, or in 62.6 per cent. Investigations on this point are now being made, but at the present time the number of cases studied is too small from which to draw conclusions.[14]

The practical bearing which such findings have on the treatment of these cases of pure aortic insufficiency becomes at once apparent; for, though one cannot hope to cure the aortic lesion, still the process may perhaps be arrested and the progress of the disease of the aorta influenced by the vigorous use of antisyphilitic treatment.

11. Siehe and Saathoff: München. med. Wchnschr., 1906, liii, 2050.
12. Albrecht: München. Med. Wchnschr., 1906, liii, 332.
13. Citron: Berl. klin. Wchnschr., 1908, xl, 2142.
14. Since the completion of this work Collins and Sachs have reported the results of their study of the Wassermann reaction in cardiovascular disease. In 12 out of 13 cases of aortic insufficiency they obtained a positive reaction. In contrast to these findings only 1 of the 7 cases of diffuse endocarditis affecting the mitral valve gave a positive result. They point to the importance of syphilis as a cause of aortitis insufficiency and emphasize the value of antisyphilitic treatment in such cases.

SUMMARY

In these statistics it may be seen that aortic insufficiency unassociated with disease of the other valves is rare after the fifth decade, and that it is seldom associated with that type of arteriosclerosis known as endarteritis deformans. The majority of cases of uncomplicated aortic insufficiency (81.5 per cent. in the present series) are associated with a characteristic type of sclerosis termed mesaortitis. The involvement of the valves takes place probably by direct extension of the process along the wall of the aorta to the aortic valves. Syphilis is certainly the commonest cause of this type of sclerosis.

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ABSTRACT OF DISCUSSION

DR. RICHARD C. CABOT, Boston: Since Dr. J. H. Wright called attention to the presence of spirochetes in the aorta of five cases of heart disease postmortem, we have been able to identify during life some cases similar to those to which Dr. Longcope has called attention. Some patients with heart disease, particularly of aortic disease, without a history of rheumatic or pyogenic infection, but with a history of syphilis and a positive Wassermann reaction in the blood, do respond to antisyphilitic treatment better I think than one would expect such patients to respond to the ordinary type of treatment with rest, digitalis, purgation and cardiac stimulation. In other words, in cases which we believe to be the result of syphilitic infection, pushing the iodids and mercury gives better results than could be obtained under the ordinary treatment. This is a point of great practical value. We should push antisyphilitic treatment in all these cases of non-rheumatic cardiac disease in which there is a history of syphilitic infection, especially if the Wassermann reaction is obtained.

DR. ALLEN A. JONES, Buffalo, N. Y.: In the clinical history of these cases, was there any record of chest pain or anginal pain? In a recent case I studied, a man of 46 had syphilis and shortly before death he gave a positive Wassermann reaction, but there was no history of aortic insufficiency. He had two severe attacks of angina pectoris and died during the third attack.

DR. WARFIELD T. LONGCOPE, Philadelphia: The point made by Dr. Cabot is an important one and the probability is that many of these patients would be much benefited by antisyphilitic treatment. The patient whose case I reported had severe substernal pain and one or two definite attacks of angina. That, of course, is common in this type of cases on account of the involvement of the coronary arteries.

THE BLACK VOMIT (VOMITO NEGRO) OF IQUITOS, PERU, IDENTICAL WITH YELLOW FEVER

ENRIQUE A. VIGIL, M.D.
LIMA, PERU

REPORTS OF CASES

CASE 1.—On August 19, 1905, three months after my arrival at Iquitos, I was called to attend Mr. G. S., a German, aged 34 and robust, who had recently arrived from Brazil, where he had passed a few days in Manaos on his journey from Europe. He lived in Iquitos above a store.

A violent shivering, with intense rachialgia, cephalalgia and fever, had been the first symptoms of the patient's illness. Examining his abdomen, there was noticeable only a well-marked sensation of pain at the epigastrium. He had fits of vomiting and a temperature of 39 C. (102.2 F.). His eyes were red. I ordered him a saline purge.

On the following day I observed that the patient's liver was enlarged and the other symptoms continued. As the purge had

caused a good evacuation, I ordered him quinin as a draught and salicylate enemas.

On the 21st a subicteric tint was observable under his eyes and his very slow pulse contracted greatly with his temperature. His face showed anxiety and fear. The vomiting, always bilious, persisted, as also the other symptoms. In the urine were found 19 gm. of albumin per liter with 21.40 of urea. I discontinued the quinin and prescribed a tonic potion with lactate of strontium and alkaline draughts.

Early on the following day my patient was in a grave condition. The most minute examination showed no alteration in the spleen. The urine gave 9 gm. of albumin per liter and 21.40 of urea. I continued the previous day's treatment, adding caffein to the potion and the enemas and alkaline draughts.

On the 23d the patient grew worse; there was delirium; he got up and endeavored to leave his room, falling at the door. I prescribed bromid of strontium. The quantity of urine was small and contained 4.50 gm. of albumin and 26 of urea.

On the 24th his condition was the same, the icterus being more pronounced. During all these days the patient drank small quantities of iced milk; and the vomiting continued, though at less frequent intervals.

On the 25th his condition was better; the fever abated and the pulse was in harmony with the temperature. On the night of the 26th the patient slept well, showed scarcely any fever and his urine, charged with bile, contained only 4.50 of albumin and 24.8 of urea. The liver was enlarged; the spleen could not be touched. The improvement continued and on the 29th there was only 1.50 of albumin per liter; fever, persistent icterus.

On the 30th the albumin was only 0.25 per liter and the general condition good. On September 1 the patient was able to leave his bed.

From the third day I diagnosed the case as yellow fever and my colleague reserved his diagnosis but did not contradict mine. This case was not followed by others.

CASE 2.—At the beginning of 1907 I was called to see a strong young man, J. S., who, after living for some time in Manaos, had come to Iquitos on business. He was a Portuguese, who had been taken ill the previous day with shivering, fever, vomiting and slight pain at the waist. His whole body ached. When I examined him his eyes were red, as also his face; he had high fever and epigastric pain. Neither the liver nor the spleen was enlarged. On the following day, as the vomiting continued, I ordered an antiemetic, an application of ice at the epigastrium and iced champagne to drink. The same evening, as I was taking his temperature, he vomited more than half a liter of a thick liquid like coffee-grounds. The fever exceeded 40 C. (104 F.). The urine contained much albumin. I immediately injected 800 grams of Hayem's artificial serum under the skin of the abdomen, and gave the patient a cold bath, repeating the bath throughout the night, whenever the temperature exceeded 39 C. (102.2 F.). The next morning he was in a dangerous condition: he had a subicteric tint in his eyes, slow pulse, high fever, little vomiting, enlarged liver, spleen painless and untouchable, urine very bilious and albuminous. I held a consultation with two colleagues, who diagnosed the case as the bilious remittent malaria of hot countries. I pronounced it to be a typical yellow fever. On consulting the family they decided to leave the patient in my hands, and I again injected a liter of artificial serum; I continued the iced champagne, cold baths and alkaline enemas, and in the end was successful. On the sixth day the patient entered into convalescence, with his liver enlarged, icterus, and a small quantity of albumin. His spleen had not altered in the least. In a few days he was able to leave for Portugal to take alkaline baths. No other cases followed.

CASE 3.—In June, 1908, I was called to see a Spanish youth, M. C., recently arrived from Spain, who had been ill for three days. He had been given various doses of castor-oil with lemon. When I saw him he vomited several times a dark liquid like coffee, resembling the vomit of yellow fever. His pulse was slow; the fever slight; liver enlarged, and spleen inaccessible. A subicteric tint was observable in his eyes; the mouth was furred, with the appearance of typhoid; urine albuminous; epigastrium painful; sensory dull. Before so plain a picture of yellow fever I should have injected serum, but circumstances which are beside the case prevented my doing so. I administered tannin in a draught, iced mineral water and alkaline enemas. For several days I fought the disease, but after alternately improving and growing worse, the patient died.

Autopsy.—I invited all the medical men of Iquitos to the post-mortem. A general icteric tint covered the integuments, being specially pronounced on the chest. The liver was exceptionally enlarged, yellow, fatty and absolutely bloodless on being cut. The spleen was small, with its capsule wrinkled and turned back. The stomach showed black patches in the larger curvature and the mucus was thick and somewhat blanched. The kidneys, which were large and white, attested the acute nephritis. The cardiac cavities were full of semi-liquid blood. The patient had died of yellow fever in its most dangerous form of icteroid typhus.

CASE 4.—A few days later the municipal officer of health invited us to the autopsy of a suspected case of "vómito negro." The deceased was a highlander, L. M., recently arrived from the mountains, and his family afforded the following information: On June 20, at 8 a. m., he felt pains in the head, waist and calves; eyes red; feverish and slightly delirious. He was given two doses of saline laxative which acted on him twice, and on the morning of the 30th he appeared better. In the afternoon he was worse; he had pains at the mouth of the stomach, nausea and high fever, at night he was delirious. He was given an infusion of vervain, which produced five evacuations, thick and somewhat black. On July 1 he was in the same condition, urine thick, fever and nausea. Again he was given vervain. On the morning of July 2 he was better, without fever; the nausea remained but there was no vomiting. He was given vervain again. On July 3 he awoke without fever, but had passed a bad night; his tongue was dry and showed dark spots; he had trembling fits and epigastric pain. He took a little chicken broth and even ate a piece of the fowl; passed dark urine several times and had various evacuations like coffee-grounds. At 8 o'clock that night hiccough came on and at 10 the patient vomited twice, more than half a chamber-vessel of blood of the colour of coffee-grounds. He was given the saline laxative in sweetened water. He passed the rest of the night with hiccough; next morning he was unconscious, did not speak, and died at 9 o'clock.

Autopsy.—A post-mortem was held the same afternoon; the body was that of a young man, whose eyes and face showed an icteric tint, which, however, was only slightly visible on the rest of the body; from the mouth there issued bloody foam. Notwithstanding the fact that several hours had passed since his death, the body was very warm; cadaveric rigor had set in. When the abdomen was opened the liver was found to be somewhat large in volume and of a yellowish color instead of its normal characteristic dark color; on cutting it transversely it gave a small quantity of blood (not bile), and in one place near the edge, which was quite pale yellow, it gave only a very small quantity of juice. The spleen was almost normal as regards dimensions but the volume was diminished, the capsule somewhat wrinkled and the soft pulp could easily be penetrated by the finger. Blood was taken from the viscera on two microscopic slides. The stomach, tied at the pyloric and cardiac orifices, was removed and opened at its smaller curvature; it contained almost a liter of dark fluid blood. In the large curvature was a fair-sized dark greenish-black stain which strongly tinged the mucus; there were also hemorrhagic stains of recent origin; the mucus was not easily removed. The heart, bloodless, showed nothing abnormal; from one auricle blood was taken on a microscopic slide. The kidneys, slightly enlarged in volume, offered nothing worthy of attention on being cut. The bladder, distended, contained urine which was intensely yellow, without being dark, and albuminous. Dr. Irujo, who examined the samples of blood, said nothing as to the result of his microscopic analysis.

CASE 5.—A few days after making the post-mortem just described I was called to see a Spanish youth, the companion of Patient 3, with whom he had come to Iquitos. The patient had been taken ill in the morning with fever, pains in the

body and slight shivering. On examining him, his thickly-coated tongue, violent headache, and no other symptoms worthy of attention caused me to postpone my diagnosis and I contented myself with ordering the patient some mineral water. On the following day his eyes were red and he had some epigastric pain, fever and headache. As the water did not appear to do him good, I ordered him calomel, which caused abundant motions. Next day, in spite of the effect of the purge, his condition was the same, and I noted that the slowness of his pulse did not correspond with the fever. I called my colleague, Dr. Irujo, in consultation and expressed my doubts as to the nature of the present case; by common accord we gave him quinin as a draught. On the following day the condition of the patient was serious; he had a well-pronounced icteric tint; bilious vomitings and dark urine strongly charged with albumin; the liver was large and painful, the spleen inaccessible. In consultation with Drs. Irujo and Carvallo, I bled him, injected a liter of Hayem's artificial serum and gave the patient an alkaline enema. The patient recovered slowly and was sent to Yurimaguas to recuperate.

CASE 6.—In the early part of the same month I saw *in extremis* a highlander, P., who was dying on the fourth day of his illness, emitting black vomits. I was unable to arrange a post-mortem.

CASE 7.—About the same time Dr. La Torre called Drs. Irujo, Carvallo and myself in consultation over the case of an Italian, M., who had come from Lima by the Pichis Pass, and a few days after his arrival had fallen ill. He had been treated by his countryman, an apothecary, who, believing it to be a case of malaria, had administered quinin for four days. When we saw the patient he was yellow from head to foot, had hiccough, scarcely any fever, and a sample we saw of a recent vomit was of a dark color; the urine contained much albumin; the liver was enlarged; the spleen could not be touched or felt on sounding the patient. Notwithstanding treatment by injections of artificial serum, the patient died on the following day, and eighteen hours later La Torre and I performed the autopsy.

Autopsy.—From the liver, which was yellow and enlarged, blood issued in very small quantities on cutting it; the spleen showed no alteration; the stomach displayed much ecchymosis and hemorrhagic spots; the bladder contained a small quantity of urine, yellow and albuminous; the kidneys were large and pale; the heart, yellow, with semifluid blood.

Grave circumstances connected with the health of my family prevented my continuing to attend patients, and afterward I left Iquitos, taking with me notes of the clinical history of cases which I believe to be typical of yellow fever.

I now propose to give a few facts respecting the situation of Iquitos, its climate and its fertility in parasites transmitting yellow fever; and I will also enter into considerations indispensable to the further confirmation of my opinion, notwithstanding that the above post-mortems leave no ground for concluding that malaria is the generator of the disease. It is a notable fact, and I do not tire of repeating it, that in none of the patients was there during life any alteration in the spleen, and in no cases did the autopsy reveal in it the disturbances characteristic of infections by the hematozoon of malaria.

SITUATION OF IQUITOS

On a high bank of the Amazon is situated the town of Iquitos, and like a ring of water the rivers Itaya and Nanay and Lake Moronacocha surround it. There are numerous marshes on the side facing the *montaña* (forest region), while that side of the town which faces the Amazon is dry.

Dr. H. W. Thomas, of the Liverpool School of Tropical Medicine, gives some interesting data[1] respecting its public health, and I cannot resist recording here those which chiefly concern the subject of this paper.

1. Thomas, W. W.: The Public Health of Iquitos, 1905.

Iquitos is remarkable for its swarms of mosquitoes, especially alongside the river and in the neighborhood of the marshes. The houses situated along the river bank are never free from mosquitoes, and if special nets were not used for the beds it would be impossible to sleep. It has been said that the yellow fever mosquito does not exist in Iquitos. This statement is false. The *Stegomyia fasciata* is found in great numbers; it is disseminated throughout the town; practically all the houses and stores are full of this parasite; a great number of houses have been examined, as also barrels and other water deposits, and the *Stegomyia* has always been found. Examination had been made of 69 houses belonging to the better class and the larvæ of *Stegomyia* were discovered in 65; in 63 cases the *stegomyia* larva was not associated with larvæ of other *Culex;* in two cases the *Stegomyia* and *Culex* were found together; in the other four cases the *Culex* was discovered in great quantities. In one house adjoining a store there were sixteen large barrels, nine shallow vessels, seven large empty oil tins and a heap of empty preserved meat tins, in addition to a collection of more than 300 bottles; in all these there was a small quantity of water, and in 90 per cent. there were larvæ of *Stegomyia fasciata.* This house is remarkable for the large numbers of mosquitoes which infest it, and on one occasion several persons succumbed to "vômito negro" in it.

Careful attention should be given to the marshes. We took samples of water from 120 springs, and allowed the larvæ to grow and develop; four samples contained larvæ of *Anopheles argyrotarsis;* the fasciolated form was found to be present in other samples; adult specimens of *Anopheles argyrotarsis, albitarsis* and *albipes* varieties, were always found near the marshes, and once in a house close by. An examination of these mosquitoes for malaria parasites was negative.

Is the "vômito negro" of Iquitos a form of yellow fever, or is it perchance a new disease? We have already said that the commission had no opportunity of seeing a single case of this disease. The generality of the symptoms, the temperature, the pulse record, and the duration of the illness, all coincide with those of yellow fever. The fact that newcomers are most liable to contract the disease is characteristic. The presence of the *Stegomyia fasciata* is a most important factor. All these points have been discussed with the Iquitos doctors, and a typical case of "vômito negro," the progress of which was related to me by one of the doctors,[2] leads me to believe in the strong resemblance which exists between yellow fever and the "vômito negro de Iquitos." Unfortunately necropsy has been impossible on typical cases of "vômito negro," which would have been of vital importance in elucidating the diagnosis.

The town of Iquitos is comparatively free from malaria and the majority of the cases come from the neighboring rivers.

CHARACTERISTICS OF VOMITO NEGRO

Case 1, that of G. S., permits no doubt as to the fact of the illness being yellow fever. How could one think of malaria when the patient grew worse on taking quinin and when, at the end of his illness, there was not the slightest alteration in the spleen? It was an isolated case of yellow fever.

The case of my second patient, J. S., diagnosed by two of my colleagues as remittent malaria, presents a most typical picture of yellow fever, is cured without quinin and shows no alteration in the spleen. Only persistent icterus remained, for which reason I sent the patient to Portugal for alkaline baths and change of climate. It was perfect confidence in my diagnosis which made me run the tremendous risk of treating this patient.

Case 3 is a typical one of icteroid typhus. The poor man had taken much quinin in the first two days, and his illness was one of the terrible forms of "vomito negro."

The autopsy on the body of L. M. (Case 4) and the story we doctors heard from his family shows us a case of yellow fever in which nothing is lacking.

2. Dr. Thomas refers to my Case 1, of which I gave him the clinical details.

Case 5 presents the "vómito negro" in an obscure form, for which reason I held a consultation. Not being sure of the case, I reserved my diagnosis, and, in accord with the doctor who saw the patient, I gave him quinin. As a result of this reagent the youth became worse; albumin appeared in the urine, and the icteric tint, and suspicious vomit were noticed; in this emergency we bled the patient, injected Hayem's artificial serum. The cure was slow but sure. The spleen showed no malarial reaction.

Poor P. (Case 6) was at death's door when I saw him; I found him surrounded by his coffee-ground vomits; it never occurred to me to think of malaria as the cause of his death. Unfortunately it was impossible to hold an autopsy.

Case 7, that of M., the Italian whom I saw with Drs. La Torre, Irujo, and Carvallo, presented a picture which admitted of no doubt. Serum was injected, but the poor fellow had already received from the hands of a quack enormous doses of quinin, and, in spite of everything we did for him, he succumbed. His autopsy, which I have noted above clearly, reveals, in accord with his symptoms, that the man died of yellow fever. His spleen showed no alteration at all; indeed, it was of normal size.

Why pretend to make malaria responsible for these deaths?

Soon after I arrived at Iquitos, a friend of mine, Mr. A. D., was taken ill with high fever, bilious vomiting, pain at the left hypochondrium, and two days later some albumin in his urine. As was natural, this patient was much afraid, because he thought he had been attacked by the famous "vómito negro" of Iquitos, of which we had heard so much on the Peruvian coast. I diagnosed this case as a remittent malaria of tropical countries, because I had no grounds for thinking that the patient's symptoms were those of "vómito negro." One of the doctors of the town who saw the patient diagnosed the case as "vómito negro de Iquitos," a special fever found in that locality, which, as I had only recently arrived, I did not know; he proposed to give the patient phenyl salicylate (salol) with acetphenetidinum, a remedy which at that time was the panacea for "vómito negro." I did not accept the diagnosis of the remedy, and consequently, on my judgment, I administered to the patient large doses of quinin hypodermically; in a fortnight he was better. Afterward he had a slight relapse, which compelled me to give him arsenic and iron to remove this clear infection of malaria completely.

I sometimes think that in Iquitos the same thing happens as does in Lima with typhoid fever. "Infectious fever" was the name given in Lima to a gastric complaint if it continued for some days; and the same name was applied to intestinal toxinfection, typhoid, malarial typhus, and other similar diseases. Something analogous occurs in Iquitos with the "vómito negro."

Although the points I have noted leave no room for doubt, I venture to offer a few remarks to strengthen my opinion.

In the presence of the patients with the symptoms presented by those I attended, three thoughts arise in one's mind: First, is it a case of bilious remittent malaria of tropical countries? Second, is it yellow fever? Third, is it a special disease peculiar to Iquitos —a colibacillosis, as Irujo believes?

The symptoms of bilious remittent malaria are very similar to those of yellow fever, and there are cases in which, while the patient lives, it is impossible to distinguish; but the autopsies are very different; for while in the bilious malaria the spleen is enlarged, and the liver enlarged, dark, bloody and full of bile when cut, in yellow fever the spleen suffers no alteration, while the liver is enlarged, of a light yellowish coffee-and-milk color, bloodless, gives scarcely more than a few drops of juice when cut and shows all the aspects of the tuberculous liver. The lesions of the stomach are very manifest in yellow fever, as also are those of the kidneys. If to this is added the circumstance that in Iquitos the mosquito most prevalent is the *Stegomyia*, as I have said, the *Anopheles* being scarcely met; and also that its climatic conditions of heat and atmospheric humidity place it in these respects in the same category as Pará and Manaos, the altitude of Iquitos above the sea-level being insignificant, it is easy to arrive at the conclusion that yellow fever and not malaria is responsible for the epidemic which raged in Iquitos and Yurimaguas last year. Bear in mind, too, the significant fact of the failure of quinin in the treatment of these patients, and the truth is so clear as to leave no room for doubt. Brought from Brazil, or originating locally, yellow fever is to-day endemic in Iquitos, where it is always present, appearing in the form either of sporadic cases, like Cases 1 and 2, or as an epidemic, such as began with Case 3 early in 1908 and has not yet terminated. It would not be far from the truth to suggest that it was this same disease, the famous "vómito negro," which destroyed the Junin battalion when it went there in 1895 with Colonel Ibarra.

On the coast we all see malaria perform its work of destruction, but, notwithstanding the abundance of cases, epidemics of bilious malaria rarely occur; the tertian and chronic malaria cause most ravage. Moreover, epidemicity is not distinctive of bilious malaria, whereas it is characteristic, in the majority of cases, of yellow fever. Again, those who are attacked by bilious remittent malaria are almost always persons who have suffered from malaria in some other form; it frequently happens, for instance, that a certain kind of intermittent malaria changes into remittent, in the same way as a simple tertian passes into a grave case of pernicious malaria.

Are we, then, dealing with a special Iquitos fever —a colibacillosis? This hypothesis has already occurred to certain doctors who have practiced in the Antilles. It is possible that colibacillosis may form part of the disease or may be wholly responsible for it; this is a question of etiology which I do not intend to discuss. It is still a matter for mature consideration to determine what is the precise cause and what is the germ of the disease. But I say to myself, "Why do we wish to make Iquitos the special locality for this disease when in Guayaquil, Pará, Manaos, etc., it always attacks by preference those who have recently arrived, as it does in Iquitos, with the same symptoms, with the same failure of quinin, with the anatomic and pathologic lesions which we all attribute to yellow fever? Why form new diseases from clinical observations which have already been well noted by others? Bretoneau, Dutroleau, Finlay, Freire, Lacerd, Silva, Lima, and others, all describe these observations of high fever, albuminous urine, black vomits, fatty degeneration of the liver and kidneys, no alteration of the spleen, in persons recently arrived in the tropics, by the name of yellow fever or black vomit?

NOTE.—I wish to thank Dr. Albert H. Carroll of Baltimore for his very valuable aid in the preparation of this article.

A COMPUTING CHART FOR MAKING A DIFFERENTIAL LEUCOCYTE COUNT

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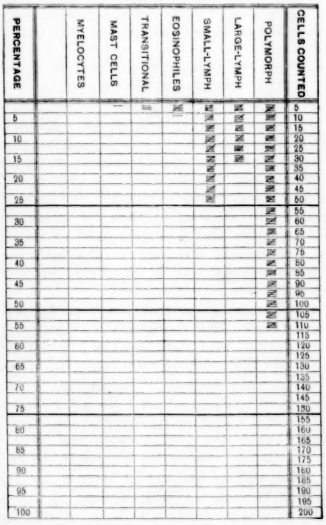
Any laboratory worker who has had any amount of blood work to do, especially in making differential leucocyte counts, has been more or less troubled with the necessity of having to figure out the percentages of the various types of cells and the liability of error.

The accompanying chart I have devised for use in the laboratory of the Cincinnati Hospital, and we have found it quite convenient in simplifying the work and removing sources of error. The chart is inexpensive and can be made out of a piece of ground glass or a slate, suitably ruled and marked in ink so as to be permanent. The temporary markings are made in pencil, can be readily erased, and the chart is again ready for service.

It is figured out on a basis of a count of two hundred leucocytes, and marked on the left to designate the various types of cells, as polymorphonuclear, large lymphocytes, small lymphocytes, eosinophiles, transitional cells, etc. At the bottom are the calculated percentages, and at the top the actual number of cells counted when the vertical columns are filled.



A computing chart to facilitate making a differential leucocyte estimation.

The heavy lines running vertically are put in simply to facilitate the count, by indicating when fifty, one hundred or one hundred and fifty units are counted for a certain type of cell, and by referring to the figures in the top row one can at once read off the actual number of each type of cell counted, and easily sum up when a total of two hundred has been reached.

This being done, the percentages are read off directly from the bottom figures and the usual calculating with the possibility of error is entirely removed.

19 West Seventh Street.

A NEW ANAL SPECULUM

DUDLEY ROBERTS, M.D.
BROOKLYN

The speculum here described was constructed in the hope of securing an anal speculum which could be introduced into a hypersensitive anus without causing much pain. The object has been accomplished, for, from a considerable experience with its use, I have found that even an anus which is the seat of an irritable ulcer tolerates examination with this instrument in a most surprising manner.

It has also been found that the view of the mucosa is exceedingly satisfactory. The distention is equilateral and no distortion of parts is occasioned, as is the case

A new anal speculum.

when the parts are made to present at the end of a tubular speculum or when some form of dilating speculum is used. It is possible that this instrument may facilitate the discovery of the mouth of a fistulous opening. Hemorrhoids are seen as bluish spots, and a far more accurate conception is obtained as to their number and size than when the patient forces down the entire venous tissue of the anal region by straining.

The tube is made of a glass of suitable thickness and the greatest possible clearness. The hole in the side of the tube is introduced for the possible purpose of making applications to ulcerated surfaces and the probing of spots suggestive of fistula. The mirror, which gives the view of the anal wall, is so arranged that it can be pushed in or withdrawn and also rotated showing the entire surface of the anus at different depths. Lubrication of the tube before introduction is done with a translucent lubricant, such as glycerin, or one of the proprietary preparations made for that purpose.

It is necessary to use either reflected light from a head-mirror or an electric head-light. When light such as this is thrown on the mirror the view is remarkably distinct, but ordinary diffuse light does not serve the purpose.

84 Remsen Street.

TRANSIENT PRESENCE OF CASTS IN URINE OF HEALTHY INFANTS

MILTON GOLDSMITH, M.D.
PITTSBURG, PA.

In connection with the article on "Transitory Urinary Findings Associated with Some Diseases of Childhood," by Carr,[1] I wish to report the following case:

A male child, 11½ months old, breast-fed until 9 months, had been since then on gradually increasing quantities of cow's milk, with cereals and corresponding withdrawal of breast-milk, until at the time these observations were made the child could be considered practically weaned.

This baby was larger than the average for his age, was strong and muscular, of a very happy disposition, had never been sick, and from all points of view would be considered an ideal child. I was attending another member of the family and simply out of curiosity to know something of the urinary

1. Carr, W. L.: THE JOURNAL A. M. A., Nov. 13, 1909, liii, 1622.

findings in infancy, asked for a specimen from the baby. On examining the urine the same day, I was more than surprised to find in it a large number of hyaline and pale granular casts, an appearance suggesting the showers of casts seen in adults. There was neither albumin, blood nor any other constituent to suggest renal disease.

The day before this specimen was obtained the child had been possibly a little less jolly than usual, but there was absolutely nothing else in his behavior to even suggest ill health; and on the day the specimen was obtained he was as happy and lively as any healthy baby could be.

I was able to obtain specimens daily for about two weeks, but in none of them did I find anything abnormal, and in occasional examinations since that time have always found the urine normal; and the child has continued in such good health as to exclude any idea that he might have been suffering from an unrecognized nephritis.

With the idea that casts might occasionally appear in normal infants' urine, I endeavored to make frequent examinations of the urine of several infants of the same age. The difficulty in obtaining specimens, due largely to my inability to get the parents sufficiently interested, caused me to give up the work after examining probably eight or ten samples from one other child of the same age as the one concerned; these examinations were all negative. While the cases reported in Dr. Carr's paper and in the discussion following are all interesting, they show a true nephritis complicating numerous infectious processes, and the only reason for their apparent rarity is that they are seldom looked for.

The condition here described, the transient presence of numerous casts in the urine of an apparently healthy infant, I have not seen mentioned in the literature.

632 Fulton Bldg.

THE LABELING OF DRIED BLOOD-FILMS

R. H. VON EZDORF, M.D.

Passed Assistant Surgeon, United States Public Health and Marine-Hospital Service; Medical Officer in Command, New Orleans Quarantine Station

QUARANTINE, LA.

It is the practice at this quarantine station to make blood examinations for malaria from the stained specimen, and to keep on file for six months or more such as show a positive finding.

It often occurs that a number of slides are made at one time, or a number of slides from one patient are taken at different hours. Such slides are labeled at once, with the name, date, hour and minute, temperature of the patient when taken, name of vessel from which the case was removed; and, after staining the preparation and completing the examination, the findings, such as "estivoautumnal rings," "crescents," "ovoids," "rings and crescents," "tertian rings," "tertian mature," "quartan," "segmenting," etc.

A simple method of labeling these slides has been adopted, which is a mere modification of one described by Stephens and Christophers, who say:[1]

> Films should always be labeled as soon as possible, otherwise uncertainty and annoyance are sure to arise. The use of paper labels is not at all necessary in routine work.
>
> 1. The most convenient method is that of writing on the end or back of the slide with ordinary ink. This should be quite dry before placing in alcohol. There is then no fear of its coming off.
>
> 2. An excellent and extremely simple method of labeling has been described by Dr. Powell (Bombay), viz.: After making a dry film, as described above, the name, date, and other necessary information, are scratched on the film with the head or point of the needle. The films used being extensive, the writing in no way injures them. The first half inch or so of the film is frequently rather thick, and much information as to name, date, temperature, etc., may safely be written on it.

In place of using the head or point of a needle, I use an ordinary black lead-pencil, preferably a soft one. The result is that the writing on the blood-film is, in effect, the same as writing on a piece of frosted glass. The label thus made in the blood-film, being a carbon deposit, remains permanent and is not affected by the staining and washing of the slide. The black also contrasts well against the red or copper color of the stained preparation, making it easy to read.

1. Stephens and Christophers: The Practical Study of Malaria, 1904, pp. 6-7.

THE FAILURE OF THE ROENTGEN-RAY IN THE TREATMENT OF HYPERTRICHOSIS

MAY CUSHMAN RICE, M.D.

Electrotherapeutist to the Mary Thompson Hospital; Gynecologist and Clinician, Illinois School of Electrotherapeutics

CHICAGO

In the early work with the *x*-ray, after exposures for various skin lesions, such as acne, eczema and epithelioma, it was discovered that hair present on the area treated would fall out. This occurred after a varying number of exposures. Not only was it true of fine hairs, but coarse hairs, when they existed, also yielded to the subtle influence of the ray.

In most cases the hair remained out for several weeks or even months; therefore it seemed that a new treatment for hypertrichosis had been found, which was painless, easily applied and henceforth to displace the tedious method of electrolysis. As a natural consequence the *x*-ray was eagerly welcomed by both patient and operator as the treatment *par excellence* for superfluous hairs. With this encouragement there was no lack of material for proving or disproving its value. Large numbers of patients were treated with apparent success at first; but almost invariably, after periods ranging from two to six months, the original growth was succeeded by a second stronger, as a rule, than that which had preceded it, and this by another and still another. Nevertheless, determined operators persevered; series on series of exposures were made in the hope that eventually the cure would be permanent, and so it was in rare instances.

Fortunately, in treating most diseases with the *x*-ray the ray affects the unhealthy tissue before the healthy, so that the disease often is cured with no more than a slight dermatitis. In hypertrichosis, the papilla, at which the destructive agent is aimed, is composed of healthy tissue and is no weaker than normal, but, on the contrary, stronger. Hence it must require a large amount of treatment; dermatitis must succeed dermatitis, frequently constituting a persistent or chronic inflammation, before any approach to a cure can be effected.

Because of the selective action of the *x*-ray on glandular tissue, under the repeated dermatitis necessary, there is atrophy of the sebaceous glands and hair-follicles, although often the papillæ remain. In addition to this, there is a vasomotor disturbance resulting in dilatation of blood-vessels or telangiectases; scar-tissue forms throughout the skin and this contracting scar-tissue, contrasting with the telangiectases, gives a most

unsightly appearance. I have seen several cases in which the tissues were in this state. Unfortunately there is no means of repair. Time, instead of improving the condition, only renders it worse by still greater contraction of the scar-tissue. Those patients who have had milder treatment, yet sufficiently protracted to cause hair to remain out for any length of time, although they do not show the telangiectases, present a decidedly wrinkled, prematurely senile appearance. One patient, whose chin was a mass of scars and telangiectases, still had five hours of electrolysis on that area. Another had received seventy-five *x*-ray exposures, given by an eminent dermatologist and experienced *x*-ray operator. A woman of 40, she looked like one of 60. The rays had weakened the hairs materially, greatly facilitating their removal by electrolysis. Twice as many hairs could be removed in an hour as when *x*-ray treatment had not been given. In spite of all this, twenty hours of electrolysis were required. This case illustrates another effect of *x*-ray treatment, namely, the strengthening of the downy hairs. The patient under consideration had, besides the twenty hours of electrolysis on the chin and neck, three hours of work on the cheeks, where, previous to the use of the ray, her face had been clear. These hairs, although not strong, were black and decidedly conspicuous. Their development might have been prevented by proper protection of the cheeks from the ray.

The stimulating action of the *x-ray*, when applied in moderate dosage, is utilized to some extent in the treatment of alopecia.

In the light of the fact that epitheliomas have developed in a number of cases on parts subjected to protracted *x*-ray exposures, should we not regard tissues in such condition as the above in a "precancerous" state? It would seem at least that the lowered vitality of the skin might render it somewhat more susceptible to epithelioma.

In a ten years' experience with the *x*-ray, having treated a large number of cases in both clinic and office practice, with no serious results, I have always made it a rule to employ the *x*-ray as a therapeutic measure only when no other form of treatment would accomplish the required result. Its use may be compared with that of anesthetics in surgery. Although, according to certain statistics, only one patient in 16,000 dies from ether anesthesia, there is always the chance of the exceptional case. In spite of the fact that in skilled hands the *x*-ray should be considered a safe remedy, it is advisable to choose the high-frequency current, electrolysis, or any other therapeutic agent which will cure the patient, rather than the *x*-ray, in view of its remote dangers. The field for the *x*-ray will still be sufficiently large.

In electrolysis is the only rational form of treatment for superfluous hair. A needle connected with the negative pole of a galvanic battery, passed into each hair-follicle to the papilla at the base of the hair, will permanently destroy the growth.

With proper technic and skill an enormous number of hairs may be removed without scarring and, by means of a recently discovered local anesthesia, the operation is rendered practically painless.

31 Washington Street.

Tuberculin in Tuberculosis of the Upper Air Passages.—The use of tuberculin preparations in selected cases of tuberculosis of the upper air tract is well warranted, but as yet there are but few recorded cases of cure, especially in this country.—J. R. Winslow, in the *Laryngoscope*.

STOCK VACCINE IN ONE CASE OF STAPHYLOCOCCUS PROSTATITIS AND TWO CASES OF FURUNCULOSIS

A. M. ROOKER, M.D.
NIAGARA FALLS, N. Y.

I wish to report on the use of stock vaccines in three cases which have occurred in my practice. The vaccine was used after all ordinary methods of treatment had failed to give relief, and the prompt results following the vaccine treatment have led me to send in this report.

CASE 1.—T. V., aged 29, had a severe attack of gonorrhea in November, 1908, was confined to bed eight weeks, and was a semi-invalid for the two following months. A discharge with severe rectal pain persisted up to May 30, when he first consulted me. The discharge contained a few gonococci, but these soon disappeared under treatment, the discharge continuing. A stricture of the pendulous portion of the urethra and a chronic prostatitis were also found. The former was soon cured by sounds, but the latter persisted after all ordinary treatment had failed. An examination of the expressed secretion showed an abundance of staphylococci in almost pure pus but no gonococci. Having no facilities for making cultures to determine the variety of staphylococci present, I used the combined aureus, citreus and albus as prepared by Parke Davis & Co., giving 100,000,000 as an initial dose. This causing no reaction, it was repeated at three-day intervals, the dose being increased at each injection until 400,000,000 was reached. The pain and irritation rapidly subsided, the prostate was nearly normal in three weeks and the secretion rapidly cleared of pus. In six weeks the patient had no trouble or pain whatever.

An interesting feature of this case is that the patient is afflicted with pulmonary tuberculosis, having had three hemorrhages and a severe cough. Within a week after the beginning of the vaccine treafment the patient's cough was markedly improved and in four weeks had practically stopped, and his weight had increased eight pounds. This unlooked-for improvement was evidently due to the effect of the vaccine on a secondary staphylococcic infection engrafted on a chronic tuberculous lesion in the lung.

CASE 2.—D. S., aged 8 months, had begun having boils when three months old. I had lanced twelve, and seven had opened spontaneously up to this time. They kept forming, notwithstanding careful asepsis after the opening of each, together with general tonic measures with calcium sulphid. Examination of the pus showing staphylococci present, I resorted to vaccine. Since I did not know whether Young's law of dosage would hold in vaccine therapy, I proceeded cautiously and gave only 5,000,000, again using the combined varieties. When the first injection was given three boils were forming; but in twenty-four hours they had practically disappeared. I gave two more doses at seven-day intervals with no recurrence up to the present time, four months after the first injection. In two weeks the baby gained three pounds, ate better and slept better than ever before. A possible etiologic factor in this case was a mammary abscess in the mother when the baby was four weeks old. The breast was opened and drained, the breast pumped and the milk fed to the child with a dropper. Whether the milk could have carried any infection or whether any of the pus was inoculated directly I cannot say.

CASE 3.—D. P., Italian, aged 18, had a secondary specific eruption, during which huge boils began to form all over his body, as many as thirty appearing in five weeks. No care being taken of them, the pus was rubbed over the surrounding skin, easily accounting for their frequency. The syphilitic eruption rapidly subsided under treatment, but the boils were unaffected. The pus showing nothing but staphylococci, I gave the patient three injections of 100,000,000, 200,000,000 and 300,000,000, each of the combined serum at four-day intervals. After the first injection one boil formed, but after the second and third there has been no further trouble, three months after the suspension of treatment.

1365 Michigan Avenue.

ENCYSTED VESICAL CALCULUS WITH PEDICLE

A. A. BONDURANT, M.D.
CAIRO, ILL.

History.—The patient, Mrs. F. L. H., consulted me March 16, 1909, giving the following history. She had ceased to menstruate several years ago and had never been pregnant; she had a feeling of pressure and bladder irritation for at least fifteen years, a bearing down when ascending stairs, and a sensation like fire darting from side to side of the abdomen on the least exertion. She could not stoop over, as it made her feel as if a cord was drawn across the lower part of the abdomen. She had seen several physicians and had had treatment for uterine and bladder trouble. She had worn pessaries and had bladder irrigation among other remedies, which gave only temporary or partial relief at times. She was neurotic and discouraged.

Examination.—I found a very sensitive spot in the urethra just in front of the bladder. The patient had used irrigation so much that I first thought it traumatic from catheterization. The bladder was somewhat contracted and very tender to sound touch. I found what seemed to be a large rough stone encysted at inferior posterior part of bladder, dragging the wall of bladder down slightly to left. Both vaginal and rectal examination (digital) revealed what seemed to be a large stone in bladder. The sound would pass over and about the roughened body but could elicit no distinct click. I diagnosed large stone probably encysted and three other physicians confirmed my opinion.

Operation.—I advised operation and chose suprapubic incision, which was done on March 22, 1909. I made an incision to admit the index-finger and found the supposed stone completely walled off from cavity of bladder, but bimanual manipulation proved it connected with posterior wall of bladder. I immediately closed the incision in the bladder completely by means of two rows of sutures; one reinforcing. I left a small drain to the bladder wall, and next made an incision above into the peritoneal cavity which had not previously been opened and found the calculus attached to posterior wall of the bladder by means of a very short pedicle which was really an extension of the peritoneal coating of the bladder and completely enveloped the mass of hard tissue which was principally osseous with some fibrous or connective tissue. I had no trouble in ligating and removing it. I closed the wound completely. The specimen weighed 378.084 grains, and measured a little over 2 by 1½ inches.

Postoperative History.—Two small stones the size of small peas were passed by the urethra, May 13, 1909, seven weeks after operation. They may have been there or forming at the time of operation, but I failed to detect them after a very thorough search. The shock was not excessive and temperature was never high. A stitch abscess from the upper incision produced a chilly sensation and temperature of 103 about the seventh day, which was promptly relieved by opening the abscess. I kept catheter in the bladder nine days, irrigating with boracic acid solution once or twice daily. I decided to risk union of bladder, as I had had no leakage at any time and directed the introduction of catheter every three hours, or more frequently if the patient was distressed from accumulation of urine. All went well until the end of the eleventh day from time of operation, when a slight quantity of urine came from first incision. Leakage continued more or less for two weeks, when bladder was distended even to moderate degree, after which progress was uninterrupted. Bladder symptoms gradually subsided until now, four months since operation, the patient has practically no trouble with it. The other distressing symptoms have disappeared and she looks and feels like a new person. This is certainly a rare specimen and, so far as I have been able to learn, the first with such an attachment.

The Reward of Industry.—The stairs that lead throneward start in low places. The world has owed most to its men of lowly birth. Let not the poor man murmur. To him belongs the future. The thrones of thought and of influence may be his if he is willing to climb up to them.—*United Presbyterian.*

A FAMILY EPIDEMIC OF ACUTE TRICHINIASIS *

JOSE L. HIRSH, M.D.
Professor of Pathology, University of Maryland
BALTIMORE

The house epidemic of trichiniasis which I wish to report first came under my observation on Feb. 7, 1909, and the history was later obtained.

The household consists of eight members, namely, a grandmother, mother, five adult children and a servant. On Jan. 31, 1909, the mother purchased in the market a variety of ham which is usually eaten raw. This was eaten by the five children; the grandmother, mother and servant did not partake of it. The disease was limited to the five children.

REPORT OF CASES

CASE 1.—Miss E., aged 23, was seen on February 7, seven days after eating the ham. Her previous history is practically negative. The present illness began the previous day, the chief complaint being indefinite pains all over the body and a decided edema of the eyelids. There was no nausea or vomiting or diarrhea. Tongue was coated; heart, lungs and abdominal organs were normal. Temperature was 100, pulse 85; respirations 20. Patient was menstruating at this time, so no urinary examination was made until a week later, when the urine was normal.

On February 8, the edema about the eyelids increased, involved entire face and the soreness and stiffness about the muscles increased. Temperature was 101. The condition resembled very much the grippe, which was prevalent at this time and which I took it to be. Blood examination showed 7,600 leucocytes. Widal reaction negative.

February 10: Patient complained of severe headache and considerable abdominal colic. The pains in the muscles of the neck and chest had become much aggravated, although at no time during the illness were there the exquisite pains which often accompany an acute myositis.

By February 15 the condition had remained practically the same, temperature varying from 99 to 104 F. Blood examination gave the following results: red blood cells, 5,000,000, leucocytes 8,000; hemoglobin 90 per cent. A differential count of leucocytes showed neutrophiles 55 per cent., small and large mononuclears and transitionals 11 per cent., eosinophiles 34.

A leucocyte count made on February 24 showed 18,000 with an eosinophilia of 32.4 per cent.

The condition remained practically the same for the next week. The variations in the temperature were very great, now and then reaching normal in the morning and evening, to be followed the next day by a rise to 102-103 F. The condition lasted three weeks; then the patient slowly convalesced.

CASE 2.—Mr. M. A., aged 28, on February 8, noted that his eyelids were somewhat swollen and that he had a tired feeling; he became exhausted on very slight exertion. He had not been feeling perfectly well for past three days. No nausea, vomiting or diarrhea was present. On February 10, the patient took to bed, with a picture of typical typhoid fever. At this time examination showed face anxious, severe headache, mild delirium, tongue dry, abdomen somewhat distended and decidedly tender on pressure; muscles of back and extremities painful on motion and uncomfortable on pressure; thoracic and abdominal organs negative; temperature, 104; pulse, 110; respirations, 28. Leucocyte count was 7,000; Widal negative and urine normal.

The condition remained practically the same for two weeks, when all the symptoms began to subside. There was no intermission in the temperature curve, which varied from 100 to 105. At no time were the muscles very tender on pressure, but the slightest movement was painful. Leucocyte counts made at various intervals (table of blood examinations) showed a constant leucopenia, on one occasion dropping to 4,300 leucocytes per mm. The eosinophilia varied from 21.6 to 38.7 per cent.

* Read before the Medical and Chirurgical Faculty of Maryland, May, 1909.

CASE 3.—Mr. G., aged 34, seen February 8, gave the following history. On February 6 patient had a severe attack of abdominal cramps which he attributed to drinking a glass of very cold beer just before retiring; he felt fairly well the following day, but the cramps returned the morning of the day I saw him. At this time he complained of great lassitude and later in the day vomited.

The following day, February 9, he was unable to get out of bed on account of the soreness and stiffness about the muscles; there was a slight puffiness about the eyelids which increased toward night. Headache and restlessness became more marked. Temperature was 99.5, pulse 90, respirations 20.

This was the mildest infection and ran its course in about three weeks. The blood examination in this case is of particular interest in that the eosinophilia was most pronounced, reaching on one occasion to 40.4 per cent, the highest of any in the series. Likewise the highest leucocyte count, 14,000, was noted in this case.

CASE 4.—Mrs. G., aged 27, had the most severe infection and gave the most typical picture of the disease. On February 10, eight days after eating the ham, the first definite symptoms appeared. The patient complained of feeling tired and the eyelids were swollen. There was no nausea or vomiting; bowels were constipated. Temperature was 99, pulse 80.

On February 12 patient went to bed. She was now complaining of severe headache, so intense as not to allow her to sleep day or night and requiring morphin to give relief. The following morning, vomiting began and was repeated at intervals of every few hours for the next two days. Physical examination at this time was negative as to heart, lungs and abdominal organs. Temperature was 102.

On February 18 headache was still a prominent feature; there were very severe abdominal cramps. Eyelids were still edematous. Pressure on the scaleni muscles gave exquisite pain. The biceps and gastrocnemi were painful both on pressure and motion; the limbs felt comfortable when they became fixed in one position, but any change from this position was attended with pain; patient said that the legs felt as if they might be made of wax and were straightened or bent only with effort. Patient complained of a peculiar pain in the upper abdomen saying she could feel it move up and down with each breath; this was undoubtedly due to the involvement of the diaphragm.

On February 20 an intense urticaria appeared over the whole body. The temperature in this case was of an intermittent type. On February 20 and 21 the temperature was normal; on the 22d and 23d it rose to 103. The respirations were constantly rapid, varying from 25 to 40; even with normal temperature the respiratory rate was as high as 30, probably owing to the diaphragmatic involvement. The blood chart in this case is also of interest; at no time was there a leucocytosis, the leucocytic count varying from 6,300 to 8,000. Likewise the eosinophilia was but of a comparative moderate degree varying from 14 to 36 per cent.

On February 27 the patient felt better and was able to sit up; the muscles still felt tender; there had been no nausea or vomiting for past few days. Temperature was normal.

Examinations of stools both by myself and Dr. Adler were negative for parasites.

CASE 5.—Mr. J. A., aged 21, was feeling well until February 11, when he began to complain of lassitude and pain in the legs, especially when going up the steps. Slight headache was present; no nausea, vomiting or diarrhea. Physical examination at this time was negative.

When patient awoke on February 12 he noted a well-marked puffiness of the eyelids. Pains in the muscles of the extremities increased. Pain was felt on motion or pressure, especially over the biceps and gastrocnemius. Temperature was 102, pulse 100, respirations 22.

On February 15 the patient was suffering from severe headache and insomnia. Temperature was continuously high with no intermissions.

On February 18 leucocyte count was 6,800, with 27 per cent. eosinophiles.

All these patients recovered, the duration of the attacks varying from three to six weeks.

TABLE OF BLOOD EXAMINATIONS IN FIVE CASES OF TRICHINIASIS

Case.	Date.	Whites.	Poly-nuclears.	Mono-nuclears.	Eosino-philes.
1.	2/18	8000	55	11.0	34.0
	2/22	12000	48.4	19.2	32.4
	2/27	10500	59.1	13.4	27.5
	3/ 1	7600	62.4	19.6	18.0
	5/ 8	.....	71.7	24.5	3.8
2.	2/18	6000	52.4	18.5	29.1
	2/22	4300	51.5	16.5	32.0
	2/27	7400	39.5	21.8	38.7
	3/ 1	.....	60.0	18.4	21.6
	5/ 8	.....	63.2	20.0	16.8
3.	2/18	12000	38.0	11.6	40.4
	2/23	14000	53.6	18.0	28.4
	2/27	9300	41.8	27.2	31.0
	3/ 2	9000	68.2	8.6	23.2
	5/ 8	.....	63.0	25.1	11.9
4.	2/18	6300	55.6	8.0	36.4
	2/23	5700	50.4	32.6	17.0
	2/27	6500	59.9	18.7	21.4
	3/ 2	8000	69.5	16.5	14.0
	5/ 8	.....	62.9	18.8	8.3
5.	2/18	6800	57.0	16.0	27.0
	2/24	7900	44.7	10.3	45.0
	2/28	7000	50.1	21.4	28.5
	3/ 1	.....	52.1	17.4	30.5
	5/ 8	.....	65.3	27.4	7.3

DISCUSSION OF CASES

An analysis of the symptoms as shown by this group of cases shows several points of interest.

The earliest symptoms showed themselves about the sixth to tenth day after the ingestion of the meat—probably at the time when the larvæ had fully devloped.

Edema of the eyelids was present in every case; in three of the patients it was the first symptom observed. This edema was of a character resembling that seen in Bright's disease. In two patients the entire face was puffy. No swellings were noted elsewhere.

Gastrointestinal symptoms were the following: Abdominal cramps were present in all; in two of a particularly severe type. Nausea and vomiting was noted in Cases 3 and 4—of a particularly aggravated type in the latter. Diarrhea was not present in any; to the contrary, constipation was troublesome.

Muscle pains were prominent symptoms. All complained of a general soreness over the entire body, and before taking to bed walking became difficult. When at rest in bed the limbs would become fairly comfortable when in a fixed position, but the least motion was associated with discomfort. In but one (Case 3) was the pain of an acute nature on pressure, and this was especially evident in the scaleni; an interesting observation in the same patient was the excursion of pain following the course of the diaphragm on deep expiratory and inspiratory efforts.

In two of the cases the temperature remained constantly high; in three there were intermissions, the temperature at times remaining normal for thirty-six hours and gradually rising to 103. Chills were not present in any. Pulse corresponded to the temperature, as did also the respiration, except in Case 3, in which the respiratory rate was constantly accelerated—probably associated with diaphragmatic involvement.

The urine was negative. The stools were negative for parasites. Urticaria was present in one case and was of an extremely aggravated variety, involving practically the whole body and lasting for three days.

THE BLOOD

The study of the blood in this disease by Brown[1] has made trichiniasis one of the diseases of easy recognition. This one particular readily differentiates it from such diseases as typhoid fever, grippe and rheumatism. In Brown's original study of 3 cases, the chief change noted in the blood was a leucocytosis, in which the increase of the leucocytes occurred in the eosinophiles.

1. Brown, T. R.: Jour. Exper. Med., 1898, p. 315.

The leucocytes varied in number from 8,000 to 30,000 per cubic mm. and the eosinophiles from 8 to 68 per cent., this eosinophilia corresponding to a decrease in the neutrophiles. This observation has been confirmed by Blumer and Neuman[2] in an epidemic of 9 cases, by Cabot,[3] Kerr,[4] Kinnicutt,[5] Atkinson[6] and others.

A study of the blood charts in my cases fails to show a constant leucocytosis; in only 2 of the 5 cases was there a leucocytosis, and that was of a moderate degree, in Case 1 rising to 18,000 and in Case 3 to 14,000. In Cases 2 and 4 there was a decided leucopenia; in the former the leucocytes varied from 4,300 to 7,400 and in the latter from 5,700 to 8,000. In Case 5 leucocytes were normal—6,800 to 7,900.

The eosinophilia, however, was constant, and varied from 18 to 45 per cent. There was no relationship, however, between the severity of the infection and the extent of the eosinophilia; in Case 3, which was the mildest, the eosinophiles reached 40.4 per cent., while in Case 4, the most severe infection, 36.4 per cent. was the highest count noted.

As to duration of the eosinophilia, examination of the blood on May 10, three months after the onset, showed an eosinophilia of 3.8 per cent., 16.8 per cent., 11.9 per cent., 8.3 per cent. and 7.3 per cent., respectively.

In one of Brown's cases there was an eosinophilia of 34.7 per cent. five months after the patient's discharge. Stump's case showed 15 per cent. eosinophilia after four and a half months.

To my great regret, I was not permitted to remove a piece of muscle from these patients, so that the diagnosis must rest on the history of five members of a family of eight eating uncooked ham, and these five becoming ill; the symptoms and the blood changes.

TREATMENT

If one sees the cases early enough a brisk purgation may prove of value; but it is difficult to see that this can be of much service when the worm has penetrated the mucosa—the time when the patient is apt to come under observation.

There is no specific for the destruction of the embryos, although hexamethylenamin has been advised with the idea that the liberated formaldehyd has some effect. Relief of muscle and abdominal pains with opiates and hypnotics to procure sleep is about all that can be done until Nature takes care of the invading parasite.

The muscle trichina (the immature or larval form of the parasite) is a worm about 1 mm. in length, which lives in the muscles of the body. It is usually rolled into a spiral and lies in a capsule which occasionally contains lime salts. If a piece of muscle containing living trichinæ is taken into the stomach of the host—as when uncooked pork is eaten—the capsule is dissolved and the trichinæ are set free. In the intestinal canal they attain maturity in about three days, when copulation takes place.

On about the seventh day after the ingestion of the muscle trichinæ the birth of the embryo begins, a process which may last for weeks. It has been estimated that a single female trichina may bear from 1,000 to 1,300 young. The female worm penetrates the intestinal wall and, according to the observation of Zenker, the dissemination of the embryos to the muscle is by way of the lymph spaces and then into the blood-stream. Askanazy[7] found the embryos in the abdominal lymph-glands; further studies by Graham[8] and Staubli[9] confirm this. Frothingham,[10] in a recent article, shows that the parasites penetrate the mucous membrane of the large and small intestine. Neither the male nor the female worm penetrates the connective tissue of the villi; the embryos are discharged into the tissues and these gain entrance to the lymph spaces, the adult worms remaining under the mucous coats of the intestinal wall, which probably accounts for the difficulty of finding the worms in the stools, except when looked for very early—that is, in the first two or three days after the infection—a time when symptoms seldom point to any definite infection with this parasite.

While Staubli in 1905 reported the recovery of the embryos from the heart's blood of infected guinea-pigs, it is but recently that Herrick and Janeway[11] first demonstrated the embryos in the circulating blood of man. By collecting 10 c.c. blood from the arm vein in a 3 per cent. solution of acetic acid, four embryos were seen in one member of a family in which nine were affected with the disease. This is undoubtedly an important advance in our method of diagnosis, and if further observations confirm these findings, blood examinations will have the same value in this disease as in malaria.

1819 Linden Avenue.

2. Blumer and Neuman: Am. Jour. Med. Sc., January, 1900.
3. Cabot: Boston Med. and Surg. Jour., 1897.
4. Kerr: Philadelphia Med. Jour., Aug. 25, 1900.
5. Kinnicutt: Practitioners Soc., Feb. 2, 1900.
6. Atkinson: Philadelphia Med. Jour., June 3, 1900.
7. Askanazy: Virchow's Arch. f. path. Anat., 1895, cxli, 42.
8. Graham: Arch. f. mikr. Anat., 1897, l, 219.
9. Staubli: Deutsch. Arch. f. klin. Med., lxxxv, 286.
10. Frothingham, C.: Intestinal Lesions Caused by Trichinella Spiralis in Rats, Arch. Int. Med., January, 1909, ii, 505.
11. Herrick, W. W., and Janeway, T. C.: Arch. Int. Med., April, 1909, iii, 263.

THE COMPARATIVE STRENGTH OF DIGIPURATUM

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In another paper[1] I recently gave a brief outline of certain undesirable effects which frequently make digitalis medication difficult. These have constituted such decided hindrances to the best results where such medication was indicated that a number of investigators and manufacturers have employed many different formulas and pharmaceutic procedures in an effort to get rid, at least, of certain of these disturbing factors.

Among the more recent products of this class is digipuratum (extract of digitalis depuratum, Knoll). The method of preparation is kept secret, but digipuratum is said to be a purified extract of digitalis, which, by a process of purification originated by Gottlieb,[2] is freed from about 85 per cent. of inert and undesirable material, including the irritating saponin-like body digitonin. The remaining 15 per cent. is said to represent the full activity of the original extract and to contain both digitoxin and digitalin. The digitalis extract having been thus purified, the resulting yellowish solution is mixed with such amounts of milk-sugar that when tested biologically on frogs it has the same activity as a like amount of strongly active digitalis leaves—that is, 1 gm. digipuratum equals in activity 1 gm. powdered digitalis leaves.

Digipuratum is further said to be insoluble in cold water and in acids, but to be easily soluble in weak alkalies. Theoretically, therefore, it is said to have no action

1. Hale, W.: A Comparative Study of Digalen, THE JOURNAL A. M. A., Jan. 1, 1910.
2. Hoepffner: München. med. Wchnschr., 1908, lv, 1774.

on the stomach and to be absorbed only after reaching the small intestine. Clinically also Mueller asserts that symptoms on the part of the stomach do not often develop;[3] but too few cases have been reported as yet to establish this claim of lessened toxic secondary effects when compared with the older preparations. Such questions must be left largely to the clinician, and the experiments which follow and the conclusions drawn from them were carried out merely to determine the drug's activity according to the biologic method of assay used at this laboratory.[1]

In order to prepare the powdered digipuratum for injection, 1 gm. of the powder was taken and to this 100 mg. sodium bicarbonate was added; this mixture of alkali and digipuratum powder was then shaken from time to time for twenty-four hours with 8 c.c. 25 per cent. alcohol. The insoluble material was then allowed to settle and the resulting clear portion was decanted and set aside. The insoluble residue was further treated with small amounts of 25 per cent. alcohol until a total of 20 c.c. alcohol had been used in this shaking-out process. The later decantations were evaporated over a water bath at 80° until the total extractive when added to the first decantation equaled 10 c.c., or a solution conforming to the U. S. P. tincture of digitalis.

Digipuratum is also marketed in tablet form, each tablet representing 1½ grains (100 mg.) of the powder. Ten such tablets were treated in the manner above described so that a resulting alkaline 25 per cent. alcoholic solution of 10 c.c. was obtained.

An assay of the powder was undertaken to determine the amount of powdered digipuratum in 10 per cent. solution necessary to produce systolic stoppage of the heart of *Rana pipiens* at the end of one hour. Doses were calculated in cubic centimeters per gram of frog body weight. The experiments gave the results shown in Table 1.

TABLE 1.—EFFECT OF POWDERED DIGIPURATUM ON THE FROG

Weight of Frog.	Dose Per Gram Weight.	Result.
49	0.004	..
48	0.005	..
45	0.006	+
53	0.007	+
55	0.008	+
49	0.010	+
60	0.012	+

An assay of the tablets of digipuratum was made to determine the amount of digipuratum tablets in 10 per cent. solution necessary to produce systolic stoppage of the heart of *Rana pipiens* at the end of one hour. Doses were calculated in cubic centimeters per gram of frog body weight. The experiment gave the results shown in Table 2.

TABLE 2.—EFFECT OF DIGIPURATUM TABLETS ON THE FROG

Weight of Frog.	Dose Per Gram Weight	Result.
42	0.004	..
47	0.005	..
58	0.006	+
57	0.007	+
56	0.008	+
43	0.010	+

These results may be summarized as follows:

Preparation.	Dose to Produce Systole.
Digipuratum powder	0.006 c.c. = 0.0006 gm.
Digipuratum tablets	0.006 c.c. = 0.0006 gm.

These results indicate that the two samples are of the same strength, a result which accords with the manufacturers' claim that digipuratum is an assayed product. They also show that digipuratum in 10 per cent. solution (corresponding to the official tincture in strength) is of about the same activity as strongly active preparations of the tincture when assayed by the same method,[4] but when compared with a series of assays[5] of official fluidextracts, diluted to 10 per cent. strength, digipuratum in 10 per cent. solution was considerably more active.

These biologic tests may, therefore, be said to show that digipuratum is of the same strength whether purchased in the tablet or in the powdered form, and that it is of about the same activity as the strongest official digitalis preparation on the market.

To what extent the use of digipuratum is justified on the grounds of lessened secondary effects is outside the province of this paper to discuss. On general grounds, however, it may be said that its use rather than a physiologically standardized official preparation seems to offer no special advantages and, except in those cases in which secondary toxic effects are produced by them, that the official preparations would be equally efficient and are about 1,500 per cent. cheaper. Whether digipuratum also produces secondary toxic effects as often as the official galenicals do is a matter which must be decided by the clinician.

Twenty-fifth and E Streets N. W.

3. Mueller: München. med. Wchnschr., 1908, lv, 2651.

4. Edmunds, Charles Wallis: The Standardization of Cardiac Remedies, THE JOURNAL A. M. A., May 25, 1907, xlviii, 1744. The doses recorded in this paper are based on the amount necessary to produce systolic stoppage of the heart of 20-gram frogs and should be divided therefore by twenty to permit of comparison.

5. Edmonds and Hale: Bull. 48, Hyg. Lab., U. S. P. H. and M.-H. S., Washington.

THE DISTRIBUTION OF ANTIBODIES AND THEIR FORMATION BY THE BLOOD*

LUDVIG HEKTOEN, M.D., AND A. J. CARLSON, M.D.
CHICAGO

In the following we give a brief summary of the principal results that we have obtained from a study of the distribution of antibodies in the body fluids of dogs and of their formation by the blood. The complete article will be published later.

In active immunization of dogs by a single intravenous injection of goat blood the lysin, agglutinin and opsonin for goat corpuscles reach their highest concentration in the blood. They are uniformly slightly less concentrated in the thoracic lymph and the neck lymph, while in the cerebrospinal fluid and aqueous humor only traces of the lysin and the opsonin can be detected at the height of immunity.

In dogs similarly immunized with rat blood the opsonin and agglutinin in the blood and lymphs describe parallel curves, the concentration being greatest in the blood. In the cerebrospinal fluid opsonin only is present, and, while the concentration is much lower than that of the blood and lymph, the curves are parallel. No increase in lysin for rat corpuscles was demonstrated by the methods used.

This relative concentration of antibodies in the blood and lymph seems to obtain in normal animals as well as in all the stages of immunization.

On transfusion of blood of dogs immunized with goat blood into normal dogs previously bled through the carotid, the antibodies can be detected in the lymphs of the recipient in 30 minutes, and in a short time the same relative distribution of the antibodies is effected as in

* From the Memorial Institute of Infectious Diseases, and the Department of Physiology of the University of Chicago.

active immunization. It seems, therefore, probable that in active immunization the distribution depends on the equilibrium relation between the blood and the lymph rather than the place of formation of the antibodies, and that the rate of passage of the antibodies from the blood to the lymph is probably in part a function of the concentration in the blood.

There appears to be no difference in the rate of passage of the various antibodies from blood to lymph, but our methods might not disclose slight variations.

When the blood of an immune animal is transfused into a normal animal previously bled dry, there is a rapid fall in the concentration of antibodies during the first 24 to 48 hours; then follows a more gradual disappearance of the antibodies until the normal limit is reached, the rate of diminution being a measure of the rate of destruction and elimination of antibodies as there is no production in the transfused blood. Hence the duration of passive immunity after as complete transfusion as possible depends on the concentration of the antibodies in the donor's blood and the quantity of this blood transfused, a point of possible importance in connection with direct transfusion for therapeutic purposes in infectious diseases.

Bleeding a dog dry while in the latent period after intravenous injection of goat blood and then transfusing him from a normal dog may have no other than a stimulative effect on the processes of antibody formation. And transfusion of a normal dog (previously bled dry) from a dog injected intravenously with an optimum antigenic dose of goat blood from 3 to 48 hours previously does not lead to the production of antibodies in the recipient. If the transfusion is made some time later after the introduction of the antigen the result is a simple passive immunization. These facts indicate that in this case the blood takes no direct part in the fixation of the antigen or the production of antibodies.

New and Nonofficial Remedies

SINCE THE PUBLICATION OF THE BOOK "NEW AND NONOFFICIAL REMEDIES, 1909," THE FOLLOWING ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK ARE ASKED FOR.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(Continued from page 2101, Vol. liii)

LACTOPHENIN — Lactopheninum. — Phenetidinum lactylatum (Pharm. Helvetica, edit. 4) — Lactylparaphenetidin. — Lactophenin is lactylparaphenetidin, $C_6H_4.OC_2H_5.NH(CH_3.CHOH.CO) = C_{11}H_{15}NO_3$, a phenetidin derivative differing from acetphenetidine (Phenacetin) in that the acetic-acid radicle of acetphenetidine is replaced by the lactic-acid radicle (lactyl).

It is prepared by heating lactic acid and paraphenetidin, in molecular proportions, at 180° C. (356° F.) until all the liberated water is expelled and crystallizing the product from hot water.

Lactophenin occurs as a white, crystalline, odorless powder, of slightly bitter taste and neutral reaction. It melts at 117.5° to 118° C. (243.5° to 244.4° F.). It is rather difficultly soluble in cold water (1:330), and is soluble in 55 parts of boiling water. It is soluble in 8.5 parts of alcohol, and is not precipitated from this solution by water. In ether and petroleum it is difficultly soluble.

On boiling 0.2 Gm. of lactophenin with 2 Cc. hydrochloric acid for one minute, then diluting the solution with 20 Cc. water, and filtering when cold, the filtrate will become colored a ruby red on the addition of chromic acid solution.

On dissolving 0.1 Gm. lactophenin in 10 Cc. hot water, and filtering when cold, the filtrate, on the addition of bromin water, should afford a decided turbidity which disappears on the addition of much water.

The aqueous solution of lactophenin must not have an acid reaction.

No blue coloration should develop on adding potassium dichromate solution to the cold aqueous solution of lactophenin (absence of phenetidin salts).

Lactophenin should dissolve in concentrated sulphuric acid in the cold without coloration (absence of foreign organic mixtures), and on incineration should leave no weighable residue (absence of inorganic admixtures).

Actions and Uses.—Lactophenin is an antipyretic and analgesic similar to acetphenetidin (phenacetin). It is claimed that it has a more marked action as a hypnotic than acetphenetidin (phenacetin) and that at the same time respiration and circulation remain unchanged. It is also claimed that the lactic acid constituent is more easily separated from the compound than is the case with the acetic acid radicle of acetphenetidin. It is stated that the preparation is absorbed from the stomach to a large extent, so that the activity of the doses given reaches its maximum in a short time.

The therapeutic indications of lactophenin are similar to those of acetphenetidin (phenacetin). It is claimed by the manufacturers to be particularly valuable in the treatment of typhoid fever on account of its combined antipyretic and sedative properties. On the other hand, it is the general opinion that antipyretics should not be used in the treatment of typhoid fever unless under very exceptional circumstances. In the opinion of good authorities the action and uses of lactophenin do not materially differ from those of acetphenetidin (phenacetin).

Dosage.—The initial dose is 0.5 Gm. (8 grains) for adults and the maximum daily dose 3 to 5 Gm. (45 to 75 grains).

Manufactured by C. F. Boehringer & Soehne, Waldhof near Mannheim. (Merck & Co., New York.) U. S. patent 503743. U. S. trademark 24643.

QUININE AND UREA HYDROCHLORIDE — Quininae et Ureae Hydrochloridum.—Chininum bihydrochloricum Carbamidum. — Quinine and urea hydrochloride, $C_{28}H_{34}N_4O_2.HCl + CH_4N_2O.HCl + 5H_2O$, is a compound of quinine hydrochloride and urea hydrochloride.

Quinine and urea hydrochloride is prepared by dissolving 400 parts of quinine hydrochloride in 300 parts of dilute hydrochloric acid, sp. gr. 1.061, mixing the solution with 60 to 61 parts of pure urea $CO(NH_2)_2$, warming the mixture until dissolved, filtering it through glass wool and setting the filtrate aside for crystallization. After twenty-four hours the crystals are brought on a filter, drained, washed with very cold distilled water, spread on flat plates and dried at room temperature. The mother liquor is evaporated and again set aside for crystallization. The second mother liquor which is colored brown is exposed in a dish to spontaneous evaporation, during which all of the double salt of quinine slowly crystallizes out and may be separated.

The hydrochloride of quinine and urea crystallizes from hot solutions in hard white interlaced four sided prisms. On spontaneous evaporation of a concentrated solution very large transparent prisms are formed. The salt dissolves at ordinary temperature in its own weight of water forming a somewhat viscid straw colored liquid, not altered by exposure to light. During its solution a marked lowering of temperature occurs.

It is not hygroscopic and is unalterable in the air excepting when warmed, the crystals lose their transparency and become yellowish. They fuse at from 70° to 75° C. (158° to 167° F.) with the loss of 10 per cent. of water forming a yellowish liquid which congeals on cooling to a yellow mass. If this mass is allowed to stand in the air it takes up after a few days the whole amount of water expelled and becomes again white. If the melted salt is dissolved in water it may be completely recovered in a crystaline form. It is also soluble in alcohol and from this solution a salt of somewhat variable composition is precipitated by ether.

Actions and Uses.—Quinine and urea hydrochloride has the actions of quinine. It is non-irritating when injected hypodermically. Recent investigations have shown that when injected hypodermically or when applied locally to mucous membranes it exerts an anesthetic action similar to that of cocaine. It is reported that the anesthesia is in some cases prolonged for several days.

Quinine and urea hydrochloride is said to be especially useful in the treatment of malaria by hypodermic injections. It

has also been applied as a substitute for cocaine in the production of local anesthesia for operations.

Dosage.—The same as Quinine. For the production of local anesthesia injections of a solution of from ¼ to 1 per cent. strength are used. The ¼ per cent. solution is said to be free from the risk of producing fibrous indurations, which sometimes occurs with the stronger solution. For application to mucous membranes solutions varying in strength from 10 to 20 per cent. should be used.

ARSEN-TRIFERRIN—Arsentriferrinum.—Arsen-Triferrin is an iron arsenoparanucleate containing arsenic in organic combination and standardized to contain a definite amount of arsenic by diluting with iron paranucleate. It should contain about 16 per cent. of iron, 0.1 per cent. of arsenic (As.), and 2.5 per cent. of phosphorus, all in organic combination.

Arsen-Triferrin is an orange colored, tasteless powder, soluble in dilute alkalies from which it can be precipitated by the addition of an acid. It is also soluble in about 8 per cent. of hydrochloric acid on warming.

The determination of the amount of iron, arsenic and phosphorus in arsentriferrin is carried out according to the method in "Prüfungsvorschriften für die pharmazeutischen Spezialpräparate." (Knoll & Co.)

Actions and Uses.—Arsen-Triferrin passes through the stomach unchanged and undissolved, but is dissolved in the intestines and absorbed. This behavior prevents injurious action of arsenic on the gastric mucous membrane.

Arsen-Triferrin is said to be useful in cases of anemia which are rebellious to iron alone, and in neurasthenia, hysteria, and in skin diseases.

Dosage.—5 grains three times a day after meals.

Manufactured by Knoll & Co., Chemical Works, Ludwigshafen a-Rhine, Germany and New York (Merck & Co., New York). U. S. trademark No. 36,747.

Arsen-Triferrin Tablets, 5 Grains.—Each tablet is said to contain 0.3 Gm. (5 grains) of arsen-triferrin.

Arsen-Triferrol. Elixir Arsen-Triferrini. Arsen-Triferrol is an elixir of arsen-triferrin containing in each 4 Cc. (1 fluidram) about 0.06 Gm. (1 grain) of arsen-triferrin in a menstruum containing 15 per cent. of alcohol. It is prepared by dissolving a soluble form of arsen-triferrin in a vehicle consisting of water, alcohol, tincture of orange, compound tincture of cardamon and vanillin.

OXYNTIN.—Oxyntin is a compound of protein and hydrochloric acid containing 5 per cent. hydrogen chloride (absolute hydrochloric acid) in unstable combination.

Oxyntin is prepared by combining hydrochloric acid with the albumin of fresh egg, desiccating the product at low temperature, and standardizing it to a uniform content of hydrochloric acid.

Oxyntin is a dry, granular powder, readily miscible with water, to which it imparts but a slightly acidulous taste.

The method of assay by which the acidity is determined is as follows:

1. About 1 Gm. oxyntin is weighed and mixed with 20 to 25 Cc. water and then titrated with standard sodium hydroxide, phenolphthalein being used as the indicator, and the result calculated to hydrogen chloride.

2. (a) About 3 Gm. oxyntin is weighed moistened with sodium carbonate solution in excess, dried, charred and extracted with hot water until free from chloride. The extract is slightly acidified with nitric acid and neutralized by the addition of an excess of calcium carbonate. This solution is titrated with standard silver nitrate potassium chromate being used as an indicator. From the result the total chloride content of oxyntin is calculated.

(b) About 3 Gm. oxyntin is weighed and treated as in 2 (a), the addition of sodium carbonate being omitted. From this result the fixed chloride is calculated.

The volatile chloride is calculated from the difference in the results between (a) and (b), and expressed as hydrogen chloride.

Actions and Uses.—Oxyntin is said to be useful as a substitute for dilute hydrochloric acid in the digestion of protein.

Dosage.—Being one-half the strength of diluted hydrochloric acid, U. S. P., oxyntin may be given 0.3 to 1.0 Gm. (5 to 15 grains) dry upon the tongue or in capsules, followed by a draught of water; or mixed with two or three tablespoonfuls of cold water, plain or sweetened to taste.

Manufactured by Fairchild Bros. & Foster, New York. U. S. trademark No. 50,968.

Articles Accepted for N. N. R. Appendix

Sharp & Dohme, Baltimore, Md.

Liquor Santalva. Liquor Santali et Copaibae Compositus, S. & D. Each 30 Cc. (1 fluidounce) contains santal oil 0.3 Cc. (5 minims), and copaiba 0.6 Cc. (10 minims), dissolved in 55 per cent. alcohol with addition of aromatic oils.

Dosage. 4 Cc. (1 fluidram).

(*To be continued*)

Therapeutics

[EDITOR'S NOTE: The following is the second of a series of five articles by Professor Osborne on the revision of the Pharmacopeia. These special articles will take the place of the regular therapeutic matter, which will be resumed on the completion of this series.]

SUGGESTIONS FOR THE PHARMACOPEIA OF 1910

USEFUL DRUGS OF THE PHARMACOPEIA OF 1900

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(Continued from page 51)

MINERAL ASTRINGENTS

These are alum, bismuth salts, copper salts, silver salts, and zinc salts.

Alum should never be used internally, except possibly as an emetic in lead colic. It should not be used in solution in the mouth and throat, as it injures the teeth. It may be used in the form of the alum stick as an astringent in canker of the mouth, or on granular eyelids. In the former condition, viz., canker, the nitrate of silver stick tends to cause quicker healing and the pain from the application is less prolonged, and the frequency of application should not be more than once in two or three days, while the alum application must be frequent. One or two applications of nitrate of silver stick (lunar caustic) is generally sufficient to heal an ordinary canker sore. Such sores and syphilitic ulcerations in the back part of the mouth are better treated by the application of a swab wet with a 25 per cent. solution of nitrate of silver.

There is no need in the Pharmacopeia for alumini hydroxidum or for alumini sulphas.

The best astringent for inflammation of the mucous membrane of the stomach and intestine is bismuth, and, if properly used, it will always do some good and will cause many cures.

There is but little difference between the action of the subnitrate of bismuth and the subcarbonate of bismuth, the subnitrate of bismuth being perhaps the better preparation. For treatment of the mucous membrane of the stomach it must naturally be administered when the stomach is empty, and the smallest dose for such a purpose, in an adult, should be 1.0 gram (15 grains). It is often well combined with bicarbonate of soda in a 0.50-gram (7½-grain) dose, with the direction that a powder be taken before meals, with just sufficient water for it to be easily swallowed. Emulsions of bismuth are unsatisfactory, and any liquid mixture of bismuth is unsatisfactory, as the dose desired is rarely received on account of the bismuth depositing all over the bottle. A "milk" of bismuth is prepared, and is a very pleasant method of administering bismuth to a child. If a patient finds a powder very disagreeable to take, such powder may be administered in an effervescing water, as Vichy or carbonated water. The gas bubbles so well suspend the insoluble, heavy bismuth powder that one does not know he is taking anything more than a liquid.

It is often well, in stomach inflammations, to precede the administration of the sedative, astringent bismuth with a glass of hot water half an hour before the bismuth is taken, either plain water, or water to which a little salt has been added, or in which a simple alkaline mucus-solvent has been dissolved, such as half of a Seiler's tablet. This washes the mucus from the inflamed membrane and leaves it ready for its bismuth treatment.

If an ulcer is suspected, and if thorough coating of the stomach with bismuth is desired, it is better to take a very large dose of bismuth once a day than small doses more frequently, such as about 3 grams (45 grains) at one dose, with just enough water to swallow it.

If it is desired to treat the duodenum with bismuth, the best time to administer it is one or two hours before the next meal. This will allow the bismuth theoretically to find the duodenum empty and the mucous membrane ready for local treatment.

For an ordinary diarrhea there is no better treatment than a complete evacuation of the bowels with any cathartic deemed advisable, followed by bismuth, 1.0 gram (15. grains), and phenyl salicylate (salol), 0.30 gram (5 grains), in powder, every two hours. After ten such powders have been taken, and the diarrhea has not been stopped, the frequency of the powders should be made once in four hours, and perhaps an occasional dose of 1/10 of a grain of morphin added. This, with proper diet and proper rest, will cure any simple diarrhea.

If there is a persistent subacute or chronic diarrhea, bismuth tablets are best for prolonged bismuth treatment of the small intestine, but to expect any bismuth action on the large intestine from bismuth administered by the mouth is a mistake. Bismuth administration by the mouth for colitis in any form is futile, although bismuth colon enemas may be given with great satisfaction.

For whatever purpose bismuth is used, it should never, in any form, be given in large quantities more than a week, or in small quantities more than two weeks, without an intermission, as bismuth concretions readily form scybalous masses in the intestine and may cause considerable trouble. The bowels may move even if such masses are present, as such retained bismuth is rarely sufficient to cause obstruction.

There is no need in the Pharmacopeia for bismuthi citras, or for bismuthi et ammonii citras.

The only preparation of copper that is used therapeutically is the sulphate, and this salt is never used in any way except as a mild cauterizer in the form of the blue stick, or as a very efficient irritant emetic. The dose as an emetic is 0.30 gram (5 grains) repeated every fifteen minutes for three times if needed, or perhaps as well in a 0.50 gram (7½ grain) dose given once. Copper sulphate would not be used as an emetic except in case some poison had been swallowed after which the vomiting was not sufficient, and in any case of such poisoning, if the stomach is not quickly emptied after the emetic has been given, instead of repeating it, the contents of the stomach should be removed with the stomach pump and syphonage. If copper sulphate remained long in the stomach it would produce irritation, inflammation, and even slight corrosion; therefore, it must be removed, if it has been administered and has not been quickly vomited.

There is no systemic internal use for silver. Its only use is in the form of the nitrate as a local astringent and caustic. In fact, its use for systemic treatment or action after absorption is probably without justification. As an astringent in the stomach for ulceration and chronic inflammation it has its advocates. The dose must be small, not more than 0.03 gram (½ grain) and that administered but once a day, or, perhaps even better, once in two or three days, and this not repeated for more than five or six doses. For such action it is best prepared with some inert powder in a dry capsule, and the capsule should be uncapped just before taking with a half a glass or more of moderately hot water. It is obvious that, to act on the stomach, the stomach must be empty, and it is best that, one-half hour before, a glass of hot water with either a half a teaspoonful of salt or a little bicarbonate of soda dissolved in it, be drunk, to wash off the mucus from the stomach walls; then the nitrate of silver taken, and it being quickly dissolved in the water taken with it will perhaps have the desired local effect on the mucous membrane of the stomach.

Nitrate of silver for action on the small intestine is unsatisfactory, and it probably should never be used for this purpose. The large intestine is often treated by weak injections of nitrate of silver, when there is chronic ulceration and chronic inflammation. The solution may vary in strength, but a large amount should not be used, and if it does not all soon again pass out of the body an injection of sodium chlorid solution should be given.

In inflammation of the urethra, silver nitrate injections have been largely superseded by organic preparations of silver. These are less irritant, quite germicidal, and are not corrosive. A number of such unofficial preparations of silver can be obtained, and it is for the Committee on Revision to decide which preparations shall be made official in the next Pharmacopeia.

Solutions of nitrate of silver of varying strength are still used with benefit as high injections, in small amount, in the posterior urethra and the bladder, when chronic or subacute inflammation is present. The stick, or lunar caustic, is valuable in many ulcerations.

There is no need for argenti cyanidum, as it is only used to prepare acidum hydrocyanicum dilutum, and this acid is so useless in small doses and so dangerous in large doses that it should be omitted from the Pharmacopeia. Argenti oxidum is not needed, and it is doubtful if argenti nitras mitigatus (mitigated caustic stick) is often used.

There is no use for zinc internally for systemic action. Even the supposed sedative action of zinc valeras (valerate), zinc valerianate, is probably a myth so far as the zinc action is concerned. It is possible that valerianic acid, in any form, and valerian salts may have slight stimulant action on the higher nervous system. In other words, an hysterical patient may be stimulated to better control of nervousness. It is the only possible explanation of valerian acting as an apparent antispasmodic and sedative.

The therapeutic uses of zinc, then, are local, and it is used as an astringent on mucous membranes, and, generally, only as such, in the eye, urethra and vagina. The sulphate is the best preparation for this purpose, and there seems to be no necessity for the acetate of zinc which acts very similarly.

Zinc sulphate is often used as an emetic, and is nearly as efficient, and less irritant than copper sulphate. The dose should be a large one, viz., 2 grams (30 grains) given in a glass of water. If it is not quickly vomited, the stomach should be washed out, although it cannot corrode as can copper sulphate.

Zinc in the form of the precipitated carbonate, zinc oxid and zinc stearate is used as a sedative to irritated and inflamed skin.

Zinc chlorid is an escharotic, and liquor zinci chloridi is a disinfectant. Both are probably not needed in the next Pharmacopeia.

Zinc bromid is not needed; zinc iodid is not needed, and, as above stated, zinc valeras is also not needed.

Zinc phenolsulphonas (zinc sulphocarbolate) has been superseded as an intestinal antiseptic and is probably rarely used externally.

(*To be continued*)

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X-RAY CARCINOMA

For further progress in our investigations into the etiology of cancer the thing that we most need is a method of experimentally producing cancer at will. With such a method available it will be possible to study, step by step, the transformation of normal cells into malignant cells, to observe the conditions that favor and impede such transformation, and ultimately to settle conclusively the relation or non-relation of extraneous parasites to malignant growth of tissues. The prevailing method of research, by the study of transplantable tumors in animals, while giving us invaluable information as to tumor biology, is defective in not showing us the earliest stage, the critical point when cells that were once normal members of the community of cells assume anarchistic relations to that community. One of the nearest approaches to an experimental production of cancer was made in the well-known experiments of B. Fischer, which consisted in causing an overgrowth of epithelium into oil that had been saturated with stains; but this overgrowth merely resembled cancer and never did actually become malignant; hence the results of this work have not been of great significance. In the cancers which follow *x*-ray exposures, however, we have a true malignant growth produced under conditions which can be properly considered as experimental, although involuntary. As Wolbach insists, the fact that "the subjects of these experimental carcinomas have been men instead of animals, and the observers not laboratory workers, does not invalidate the evidence."

It is, indeed, strange, in view of the striking character of *x*-ray lesions and the resulting malignant degeneration, that they have not been more systematically considered by the experimental pathologists as a source of information for the elucidation of tumor etiology. A good foundation for future work, however, is laid in the two extensive articles recently published by C. A. Porter and S. B. Wolbach,[1] which consider at length both the clinical and the pathologic aspects of *x*-ray lesions. Dr. Porter has had the unique experience of studying and operating on thirteen patients with severe lesions following exposure to these rays, in all but three of which malignant proliferation was present. In the literature he found records of thirty-four other similar cases, but this unquestionably represents by no means all the cases of this kind that have been observed. Among the most interesting features of clinical study may be mentioned the following: The *x*-ray dermatitis is a perfectly typical form of occupation dermatitis, and in the chronic variety is entirely distinct from all other forms of skin lesions. The changes are distinctly atrophic, with keratoses which are entirely comparable to the senile changes of the skin, as pointed out by Pusey. As in the senile, but much more frequently, there develops in the base of these keratoses a squamous cell carcinoma, and this malignant change, it is to be emphasized, occurs just as certainly in the neglected *x*-ray lesions of the young as in the old. In other words, *x*-rays produce senile changes in the skin, and senile epithelioma follows as a result, irrespective of the age of the individual who possesses the senile skin. As to malignancy, *x*-ray cancer is also entirely comparable to senile cancer, not tending to early or extensive metastasis, and being easily controlled if only radical measures are used in the early stages. It seems that cancer is more likely to occur in those who also subject the skin to the irritation incidental to the development of the plates than in those who do only *x*-ray work, just as the senile skin becomes cancerous chiefly at the points where it is most exposed to irritation. As the slight protection afforded by the cuffs seems to prevent *x*-ray dermatitis, Porter suspects that the harm is not done by the *x*-rays themselves, but by other emanations from the tubes.

Dr. Wolbach considers that all the changes produced by the injurious emanations, whatever they may be, are primarily of a degenerative character, and of such a nature that after a certain amount of injury has been done normal repair becomes impossible. Progressive vascular changes, leading to obliteration, keep up the degenerative processes, so that even years after the last exposure active changes are found to be still taking place. Of all the exposed tissues the epithelium is least injured, and so, as the underlying connective tissue disintegrates, the epithelium grows down to reach the deeper and less injured strata where it can still obtain nourishment. In this way the surface integrity is preserved, but with the formation of thickened layers of epithelium, from which, eventually, the carcinomas develop. By the study of many lesions at different stages it is possible to follow out the entire sequence of events in the genesis of a carcinoma, under conditions as favorable as in any animal experiment.

It will be noticed from the above account that it is the degeneration of the connective tissue which is primary to the overgrowth of the epithelium, an observation which is in harmony with the hypothesis of Ribbert, who held that the increased activity of cell growth was due to the diminished resistance offered by the surrounding tissues. It also recalls von Hansemann's "anaplasia" theory, namely, that malignant proliferation is essentially a reversion of the cells to a purely proliferative and vegetative type at the expense of functional capacity. Wol-

1. Porter, C. A., and Wolbach, S. B.: Jour. Med. Research, 1909, xxi, 357; abstr. in THE JOURNAL, Jan. 1, p. 81.

bach believes that in *x*-ray cancer the epithelial cells achieve slowly an increased power of growth at the expense of differentiation, as a result of repeated periods of overgrowth lasting for years, and under conditions of impaired nutrition, as a result of which the cells acquire the ability to gain their sustenance at the expense of other living tissue. Similar reasoning can be applied to the many other forms of surface cancer following protracted injury, such as the cancers of chimney-sweeps, aniline workers, paraffin workers, the cancers following on lupus and leucoplakia, etc., and it seems to be thoroughly logical and satisfactory. It will be observed, also, that the activity of parasites does not need to be assumed to explain the characters and genesis of these neoplasms.

There seems no evident reason why *x*-rays and the other agencies mentioned, which produce cancer so readily in man, should not be capable of producing cancer equally well in laboratory animals, once the proper conditions have been learned. If this can be done with any considerable frequency it will put the study of cancer on a better foundation than it has ever yet enjoyed, with corresponding prospects of rapid progress in our understanding of the etiology of neoplasia.

GERMOPHOBIA

The development of the science of bacteriology has given rise to a new type of 'phobia—the dread of microbes. That vague dread of the mysterious and unseen or unknown which formerly attached to gnomes and kobolds now surrounds microzoa and bacteria, beings as invisible to the unaided eye of flesh and, to the popular fancy, ten times as full of maleficent power. The very word "microbe"—innocent enough in its definition of "a little living being"—has, in the minds of most persons, an ill-defined malign implication. Science itself has encouraged, though without design, this one-sided view of the activities of micro-organisms, for, naturally, the pathogenic germs have been studied before the non-pathogenic, and largely to the exclusion of the latter. Popular writing, moreover, usually exaggerates and often distorts the obvious trend of science.

A typical example of this exaggeration is to be found in the recent book by Mr. Upton Sinclair and Mr. Michael Williams on "Good Health and How We Won It." Mr. Sinclair and Mr. Williams succeeded in regaining their health by greatly limiting their diet and by cutting meat out of their dietary. They proceed to show on the strength of statistics and observations the value of the exclusion of meat from the dietary of those who would be healthy, since bacteriologic examination shows that all the forms of meat contain immense numbers of germs. How appalling for the general public it must be to be told that an ordinary specimen of sirloin steak such as was served at the table of a prominent city hotel, when taken to the bacteriologic laboratory and examined without delay, contained nearly four hundred million anaerobic germs per gram of moist material! This was, however, "not a counter" to what was found in other food materials, fish and flesh. For instance, in round steak there were five hundred sixty million of anaerobes and four hundred twenty million aerobic microbes per gram. In large sausage there were five hundred sixty million of anaerobes and four hundred twenty million aerobes. In small sausage there were eight hundred thirty-four million aerobes and six hundred sixty-three million anaerobes. After these materials had been kept at room temperature for some hours the number of microbes in most cases very nearly doubled and sometimes more than doubled—all this in spite of the fact that these observations were made in the winter when germs are less abundant because of the diminished amount of dust in the air, and when the low temperature prevents them from growing as luxuriantly as in warmer weather.

If these statistics were to be taken as seriously as the authors suggest, it would seem utter foolhardiness to eat any meat. Especially would this be true in regard to the meats which supply the poor with their proteid nutriment, such as ham, bacon, sausage and Hamburg steak, for, even more than higher priced classes of meats, these swarm with microbes. It is evident that most people have been eating germ-laden food ever since the world began; and all who are not yet dead have survived it so far, which seems a wonder at first glance. Stolid, unscientific common sense, however, refuses to be frightened away from the food on which it has thriven for so long, and serious science finds some justification for the common-sense attitude.

Of course, the pseudoscientific fallacy lies in the assumption that all germs are dangerous, whereas, just as some macroscopic plants and animals are noxious to human beings and others innocuous, so it is with microscopic organisms. The microscopic plants that are dangerous to human life are very few indeed. We know about two score that produce seriously injurious results; and probably there are thousands of others that are either harmless or even positively beneficial. We deliberately eat certain microbes in cheese and consume their products in vinegar or in sour milk or in other food materials. Not only are these not harmful, but in proper quantities and at proper times they are adjuvants to nutrition. We deliberately encourage certain forms of fermentation (which is, after all, one kind of microbic growth) in silo for cattle and in sauerkraut for human beings and do not anticipate serious harm from the moderate use of these foods. How much the microbic flora constantly present in the intestines and increased in quantity and probably also in variety every time any kind of food, animal or vegetable, is taken, may help in digestion we do not as yet know. There is a theory, however, that these microbes of various kinds are helpful rather than hurtful in digestive processes.

An aversion to unnecessary contamination by noxious micro-organisms may well serve as a protection against disease; but an insane terror of infection may make life very miserable without appreciably lengthening or strengthening it. In the first place, the paradise of faultless prophylaxis—the aseptic Eden which seems to be the ideal of the germophobes—is unattainable. We cannot banish micro-organisms from our human world; we can only try to keep that balance of conditions most favorable to the life of the human organism. In the second place, the attitude of mind cultivated in the perpetual endeavor to evade disease may be almost a worse evil than the disease itself; certainly it furnishes the best excuse for the existence of those sects which deny the existence of all disease and the usefulness of any precautions. "Life is a dangerous thing at best and very few of us get out of it alive," while those of us who spend all our energies trying to elude its incidental risks might almost as well never have lived at all. Health is largely a matter of a proper balance of opposing forces; and that balance can be preserved, in part, by cultivating a due measure of indifference to inevitable dangers.

THE PHARMACIST AND THE NOSTRUM BUSINESS

For more than half a century the American Pharmaceutical Association has done splendid work in the interest of scientific pharmacy, its annual reports embodying a vast amount of invaluable data. Unfortunately, until within the last few years this association has dealt almost exclusively with the scientific side of pharmacy, having to a large extent ignored the economic problems of the profession; it also neglected to recognize aright the needs of the individual pharmacist and did little to encourage local organization. More recently, however, and when too late, it has extended the scope of its activities and branches have been established here and there which are dealing with local problems. By its former short-sighted policy, the American Pharmaceutical Association lost its opportunity—its hold on the retail pharmacists. By ignoring the very evident fact that pharmacy was a business as well as a profession and by refusing to recognize the equally patent fact that the very existence of pharmacy as a science was dependent on its success in coping with the economic problems involved, the association failed to appeal to the rank and file of druggists.

To fill the gap thus left, another body was organized—the National Association of Retail Druggists—whose *raison d'être* was frankly that of helping the pharmacist in his commercial dealings; it was, in brief, to deal with the druggist as a business man rather than as a professional man. This latter organization grew, and has branches all over the country. A little while ago it originated the "get-together" meetings—a splendid idea—to bring physicians and pharmacists into more intimate touch with one another. Incidental to this and connected with it was the movement to get physicians to prescribe official rather than proprietary medicines. In this the pharmacists recognized their own shortcoming in the past and expressed their desire to cooperate with physicians in an attempt to make druggists compounders of drugs instead of retailers of ready-made mixtures and to make physicians writers of real prescriptions rather than the dupes of proprietary companies.

Unfortunately the National Association of Retail Druggists has within the past few months entered into a *mésalliance* with the "patent medicine" evil in its most insidious form. It has become, apparently, the creature of a cooperative "patent medicine" concern, comprised of a number of its own members, a concern to which we devote some space in the Pharmacology Department of this issue. If the retail druggists are sincere in the propaganda which they instituted with the object of weaning physicians from the unreliable and mystery-provoking proprietaries, back to prescribing official and non-secret preparations, then let them at least be consistent. If they insist on the right to prescribe, then, in the name of consistency, let them prescribe official and non-secret preparations themselves instead of substituting cooperatively-made, for privately-made, "patent medicines."

The coalition is an unfortunate one, especially at a time when the medical profession and the public are keenly alive to the viciousness that is inseparable from the nostrum business. It was to be hoped at this juncture, when the so-called ethical nostrums are being discarded by physicians and the use of "patent medicines" by the laity is decreasing, that the druggists of the country would rise to the opportunity that presented itself to bring the profession of pharmacy back to its one-time position of honor. Nor for years has the time been so propitious for welding together the interdependent professions of pharmacy and medicine. We are still optimistic enough to believe that the eagerness of the retail druggists to go over, body and soul, to the nostrum business is more apparent than real, and that the present control of the National Association of Retail Druggists by an organization whose objects are so plainly inimical to the science of pharmacy is but a passing phase. The self-respecting druggist can assert himself in this matter none too soon; that this profession has so far forgotten its ideals as to lend its support to the vicious "patent medicine" business is a standing advertisement of shame to the retail pharmacy business of this country.

A NEW ERA IN PHARMACOLOGY

We published last week[1] a report of an investigation of the pharmacology of digalen, a preparation of digitalis that has been on the market a number of years and which has attracted much attention both here and abroad. There has been and still is some controversy as to

1. Hale, W.: A Comparative Study of Digalen, THE JOURNAL A. M. A., Jan. 1, 1910, p. 35.

exactly what the preparation is; when it was first introduced the advertisements contained a number of distinctly misleading and exaggerated statements. The latter having been eliminated, the Council on Pharmacy and Chemistry accepted it for New and Nonofficial Remedies, with, however, the following qualifying statement: "The Council has not determined whether digalen contains 'soluble amorphous digitoxin' or not, but accepts it merely as a standardized, soluble and fairly stable digitalis preparation." Hale's results show that pharmacologically it is much weaker than crystallized digitoxin (digalen is claimed to be soluble digitoxin), being more like digitalein, and he finds little in its pharmacologic action to indicate that it has advantages, for ordinary purposes at least, over the usual preparations of digitalis.

This week[2] Dr. Hale gives the results of his experiments with another proprietary preparation of digitalis —digipuratum. These indicate that this product possesses a definite strength which, apparently, is constant, but he finds that it offers, on general grounds, no marked advantages over physiologically standardized official preparations.

Attention is called to these two articles, not primarily because of their findings, although these are of more than passing interest, but because of what such investigations mean to the medical profession. It is an encouraging sign of the times that disinterested and skilled men will thus take up the examination of proprietary drugs. It is, moreover, another evidence of the results of the work which the American Medical Association is accomplishing for therapeutics through the Council on Pharmacy and Chemistry and THE JOURNAL. Even five years ago it would have been practically impossible to find any work done on proprietary preparations except that of a purely commercial nature, with "findings" that savored more of the testimonial than of the scientific spirit. Now all is being changed. Not only are men of high professional standing subjecting the newer proprietary remedies to dispassionate and unprejudiced examination, but also—and this is of even greater moment—medical and other scientific journals are willing to publish the results of such examination, whether the findings are favorable or unfavorable. This changed attitude can only be productive of the greatest good for pharmacology. Valuable additions to materia medica will be more quickly recognized; honest but valueless remedies will more quickly be discarded, while the proprietary nostrum will be unable to pursue for long the course of vicious deception which has in the past characterized products of this class.

While wonderful advance has been made along the lines of bacteriology, pathology, physiologic chemistry, etc., comparatively little progress has been made in pharmacology. The study of therapeutics, so far as drugs are concerned, has been neglected. The one need which now confronts the medical profession is more knowledge of drugs and their physiologic and therapeutic action; and this means that there is a need of more institutions in which work such as that done by Hale can be carried on. The number of laboratories in which pharmacologic research can be done is deplorably small, yet the active practitioner of medicine is more directly interested in investigations of this nature than he is in the investigations in any other of the fundamental branches of medicine. Unfortunately, even the best among our medical colleges have been wofully slow in recognizing this fact. Efficient departments of pharmacology in our medical schools is the great need to-day.

2. The Comparative Strength of Digipuratum, page 129, this issue

A FINAL WORD ON TUBERCLE BACILLI IN THE BLOOD

About one year ago Rosenberger advanced his theory that tubercle bacilli are in the blood in considerable numbers in practically all cases of localized tuberculosis. But since then systematic study of the blood in tuberculous patients and in tuberculous cattle, coupled with appropriate animal experiments, have uniformly yielded wholly negative results in the hands of so many careful observers that Rosenberger's theory now must be dismissed as without any standing whatsoever. In place of marking a great step in the growth of our knowledge of tuberculosis, as was daringly prophesied, the "discovery" in reality proves to be an insignificant episode of mere evanescent interest. Probably the same fate awaits the less-noticed assertion in regard to the frequency of tubercle bacilli in the feces. An outcome of positive value from this work is the finding that water, even when distilled, may contain acid-proof bacilli strikingly like the tubercle bacillus. That the use of such water in staining for tubercle bacilli under certain conditions may lead to error is self-evident. Knowing this possible source of error, it will be easy to guard against it hereafter. Of theoretical rather than immediate practical bearing is the observation that even when very large numbers of tubercle bacilli are thrown into the bloodstream they are removed from the circulating blood with astonishing rapidity.[1]

MEDICAL SECRECY AND THE INSANE

Judge Stafford of the Supreme Court of the District of Columbia, in a recent decision, holds that the law requiring communications from a patient to his physician to be considered privileged does not apply to the evidence of an asylum superintendent as to his observations of or communications with a patient who is suing for release by habeas corpus. He held that the legislature could not have intended the law to apply to such a case, as such a construction would paralyze the government in its treatment of the insane. Even if such communications were privileged, the patient waived the privilege by instituting the proceeding. There are many difficult questions which arise in the construction and

1. Anderson: Bull. 57, Hyg. Lab., U. S. P. H. and M.-H. S.; Sawyer, Wilbur A.: Tubercle Bacilli in the Blood, Arch. Int. Med., 1909, IV, 628.

enforcement of statutes requiring medical secrecy, but in this case the judge seems to have given a straight common-sense decision. If a patient in an asylum could claim to be sane and bar out all evidence to the contrary, except what he might himself give by his conduct in court, or from unskilled underlings and casual visitors, a very large proportion of the most dangerous inmates of the state hospitals could very easily obtain their liberty, and society would have no defense whatever against the possible consequences.

Medical News

ALABAMA

Personal.—Beginning with the October issue, Dr. Henry A. Moody became associate editor of the *Gulf States Journal of Medicine and Surgery* and *Mobile Medical and Surgical Journal*.——Dr. Paul E. Gwin, Bessemer, has resigned as city physician and has taken charge of the Woodward Ironworks Company at Dolomite, vice Dr. Lycurgus Thomas, deceased.

County Societies Elect Officers.—At the annual meeting of the Mobile County Medical Society, held December 19, Dr. William R. Jackson was reelected president; Dr. Marion J. Bancroft, vice-president; Dr. Stephen F. Hale, secretary, and Dr. Marion T. Gaines, librarian, all of Mobile. Dr. Calvin N. Owen, Mobile, was reelected a member of the board of censors.——Tallapoosa County Medical Association, at its annual meeting, held in Dadeville, December 14, elected Dr. William T. Langley, Jr., Camp Hill, president; Dr. James O. Griffin, Hackneyville, vice-president; Dr. Aaron L. Harlan, Alexander City, secretary; Dr. Neal B. Dean, Alexander City, treasurer, and Dr. James A. Goggans, Alexander City, county health officer.——At the annual election of Madison County Medical Society, held in Huntsville, December 14, the following officers were elected: Dr. Claud C. Pettus, Huntsville, president; Dr. Marion R. Moorman, Huntsville, vice-president; Dr. Edgar Rand, Huntsville, secretary-treasurer; Dr. William C. Wheeler, Huntsville, censor; Dr. William W. Haden, Huntsville, monitor; Dr. James F. Burnam, Huntsville, county health officer; Dr. Ollie B. Patton, city health officer of Huntsville; Dr. Benjamin E. Graham, health officer of Gurley; Dr. Luther L. Wikle, health officer of Madison; Dr. William C. Wheeler, Huntsville, jail physician, and Dr. Ernest Walker, physician of the poor-house.

COLORADO

New Sanatorium.—The nuns of the Order of St. Francis plan a sanatorium for tuberculosis on one hundred acres of land secured near Denver. The sanatorium is to be designed both for the wealthy and poor, the proceeds from the treatment of the former to be used to defray the expenses of the latter.

Denver Deaths.—During the year ended Dec. 1, 1909, there were 3,186 deaths from all causes in Denver, as compared with 3,358 in the preceding year. The deaths from typhoid fever and pneumonia were decreased and deaths from tuberculosis increased. Suicide passed typhoid fever as cause of death and took the tenth place on the list.

Women Physicians of State Meet.—The Colorado Woman's State Medical Society held its annual meeting at Denver, December 28, and elected the following officers: Dr. Kate Lindsay, Boulder, president; Drs. Lucy M. Wood, Boulder, and May B. T. Kruse, Denver, vice-presidents; and Dr. Kate E. Geiger Yont, Denver, secretary-treasurer.

DISTRICT OF COLUMBIA

Dinner to Col. Havard.—The officers of the medical corps on duty in and around Washington gave a farewell dinner to Col. Valery Havard, prior to his retirement from active service, at which the surgeon-general presided.

Surgeon-General Entertained.—Brigadier General George H. Torney, Surgeon-General U. S. Army, spent December 6 and 7 in Philadelphia. He was guest of honor at a dinner at the Union League Club, made an address on "The Medical Officer of the United States Army" before the Northwestern Medical Society. During his stay in Philadelphia, General Torney was the guest of Dr. Clarence B. Franklin.

Personal.—Surgeon-General Walter Wyman, P. H. and M.-H. Service, has sailed for Port Limon, Costa Rica, to attend the International Sanitary Conference of American Republics.——Dr. Thomas A. Lee has resigned as resident physician at the Casualty Hospital.——Surgeon William C. Braisted, U. S. Navy, has been assigned to special duty as general supervisor of the construction of hospitals at naval stations and has been succeeded as assistant to the chief of the bureau of medicine and surgery by Surgeon Frank L. Pleadwell.——Dr. Charles S. White sustained a serious sprain of the left wrist and right knee in a collision between his automobile and a street car, November 24.——Dr. Charles P. Grandfield has been appointed postmaster of Washington.——Dr. Joseph J. Kinyoun, who resigned as professor of bacteriology and pathology in George Washington University, has been appointed bacteriologist of the District Health Department.——Dr. and Mrs. Walter A. Wells have returned from Europe.

GEORGIA

Personal.—Drs. Nicholas Peterson, Tifton, and Thomas R. Wright, Augusta, have been appointed trustees of the Georgia State Sanitarium, Milledgeville.——Dr. Charles M. Curtis has been made chairman, and Dr. James T. Henley, secretary of the College Park Board of Health.——Dr. Bernard McH. Cline, Milledgeville, has been appointed a member of the staff of the State Sanitarium.——Dr. Charles G. Giddings, a member of the visiting staff of Grady Hospital, Atlanta, has resigned.

Society Meetings.—At the annual meeting of the Sixth District Medical Society, held in Macon November 10, the following officers were elected: President, Dr. James A. Combs, Locust Grove; vice-president, Dr. Johnson M. Moore, Macon, and secretary-treasurer, Dr. Irby H. Adams, Macon.——The annual meeting of the Second District Medical Society was held in Albany, November 10. Dr. James M. Barnett, Pretoria, was elected president; Dr. C. Kosciusko Sharp, Arlington, vice-president, and Dr. Francis M. Martin, Shellman, secretary-treasurer.——At the annual meeting of the Tenth District Medical Association, held in Augusta November 9, Dr. Noel M. Moore, Augusta, was elected president; Dr. Joshua R. Beall, Blythe, vice-president; Dr. George A. Traylor, Augusta, secretary-treasurer, and Dr. Wyman W. Pilcher, Warrenton, councilor.——The Macon Branch of the State Antituberculosis and Sanitary Society was organized at Macon, December 7. Dr. Charles C. Harrold was elected president; Dr. Herbert Respess, vice-president; Dr. Samuel B. Palmer, secretary, and Dr. G. T. Miller, censor.——Ware County Medical Association, at its annual meeting held in Waycross, December 7, elected the following officers: President, Dr. Robert P. Izlar, Waycross; vice-president, Dr. James C. Rippard, Waycross; secretary-treasurer, Dr. Albert Fleming, Waycross; delegate to the state society, Dr. Charles R. Oglesby, Waycross; alternate, Dr. William R. Moore, Patterson, and censors, Drs. John L. Walker, Charles R. Oglesby and James H. Latimer, all of Waycross.

ILLINOIS

Food Standard Commission.—On December 6, the governor appointed as members of the State Food Standard Commission Charles E. M. Newton, "a representative of the Illinois Food Manufacturing Industries," and Dr. Walter S. Haines, Chicago, "an expert food chemist of known reputation" in accordance with the requirements of the law, and these gentlemen constitute the State Food Commission, with Mr. A. H. Jones as chairman, Dr. T. J. Bryan, 1620 Manhattan Building, Chicago, as corresponding and recording secretary. Among the early subjects to be considered are ice cream, condensed milk, and evaporated milk. The commission will not make a standard until it has fully investigated both the scientific data with reference to the products, and the trade conditions and customs relating thereto. It requests all interested to submit briefs in triplicate to the secretary of the commission at as early a date as possible. After these briefs have been considered, a public hearing will be given to those interested, for the presentation of evidence and arguments.

Personal.—Dr. Benjamin E. Gleeson, Danville, has been appointed local oculist and aurist to the Illinois Traction System and the Chicago and Eastern Illinois Railway.——Drs. George W. Mitchell and J. C. Osterbeck, assistant physicians at the Bartonville State Hospital, have resigned as the result of action taken by the Illinois Civil Service Commission.——Dr. M. William Fitzpatrick, Decatur, has been elected physician of Macon county.——Dr. John F. Taylor, Buda, has been obliged to give up practice on account of ill health, and will soon leave for Montana.——Dr. Francis E. Melugin, Thomson,

was operated on recently at Mercy Hospital, Clinton, for disease of the gall-bladder.——Dr. Martin Saucerman, Rock Grove, has left Freeport Hospital, where he has been a patient for the past six weeks.——Dr. Effie Current, formerly of Danville, who went to Colorado for her health, has taken up professional work in a tuberculosis sanatorium in Brush.——Dr. Robert C. Bourland, Rockford, has been appointed district medical examiner by the civil service board.——Dr. Harry C. Hill and family, Streator, leave January 15 for Europe.——Dr. William M. Richards, Joliet, was operated on for appendicitis at Silver Cross Hospital, December 24.——Dr. Emma B. Standley, Alexis, is taking a trip to the Orient.——Dr. Ira O. Paul, Winnebago, was thrown from his sleigh, December 24, fracturing his left hip.

Chicago

Personal.—Dr. Henry D. Shonts is critically ill with pneumonia at his home.——Dr. Myer Nuta was operated on for double hernia by Dr. Thomas Jonnesco, December 22.——Dr. and Mrs. Jacob Frank have left for Europe and the Orient.——Dr. Eleazar A. LaMothe has been elected professor of ophthalmology in the Chicago Eye, Ear, Nose and Throat College.——Dr. Thomas F. Doyle was seriously burned on the head and face by a gas explosion in his bath room, December 19.

Gifts to Hospitals.—By the will of the late Thomas Murdock, who died Christmas day, one-third of $2,500,000 is devised to the Presbyterian Hospital, to be used for an endowment fund, to be known as the Jane Murdock Memorial Fund, in memory of the sister of the donor.——A gift is said to have been made to the Iroquois Memorial Association, sufficient to complete the building fund for the hospital to be erected at 87 Market street, which is to cost between $50,000 and $75,000.

Hospital Committee Named.—The president of the Board of Commissioners of Cook County has appointed a committee of six, consisting of Dr. William L. Baum, the warden of the County Hospital, the county attorney, and three county commissioners to meet a similar committee appointed by the city council, consisting of Drs. William A. Evans and Heman Spalding, the corporation counsel, and three aldermen, to discuss ways and means of turning over the county hospital to city control.

Chicago Mortality in 1909.—During 1909, 31,262 deaths were reported, equivalent to a death rate of 14.05 per 1,000. Of the dead, 6,392 were under 1 year of age, 2,972 between 1 year and 5 years, 1,949 between 5 and 20 years, 13,169 between 20 and 60 years, and 6,734 over 60 years, and 46 of unknown age. Chief among death causes were pneumonia, with 4,962 deaths; tuberculosis, with 3,870; diarrheal diseases, with 3,560; heart diseases, with 2,897; violence, with 2,388; and nephritis, with 2,338. Diphtheria caused 675 deaths, scarlet fever, 360; typhoid fever, 269; measles, 174; and whooping cough and influenza, each 151.

KANSAS

Medical Board Wins Case.—In the case of D. J. Smith, Athol, who was prosecuted by the State Board of Medical Registration and Examination on the charge of practicing medicine without a license, the defendant is said to have entered a plea of guilty and promised to cease practice, whereupon the minimum fine of $50 and costs was imposed.

Personal.—Dr. Christian B. Stemen, who located in Kansas City, Kan., several years ago, has returned to his old home in Fort Wayne, Ind., and will resume practice there.——Dr. George W. Hochrein, first assistant physician at the State Insane Hospital, Topeka, has resigned.——Dr. Lot D. Mabie has been appointed a member of the Kansas City Board of Health.

Society Meetings.—At the annual meeting and election of Shawnee County Medical Society, held in Topeka, December 6, the following officers were elected: Dr. Charles F. Menninger, president; Dr. Melanethon C. Porter, vice-president; Dr. H. Milton Connor, secretary; Dr. Samuel A. Johnson, treasurer; Drs. Herbert L. Alkire, William E. McVey, and Daniel E. Esterly, delegates to the state society, and Drs. Samuel A. Johnson, Clarence A. McGuire, and Robert S. Magee, alternates, all of Topeka.——Lyon County Medical Society, at its annual meeting and banquet, held December 6, in Emporia, elected the following officers: Dr. Charles W. Lawrence, president; Dr. Clarence A. Neighbors, vice-president; Dr. James F. Worley, secretary-treasurer; and Drs. Frank A. Eckdall, Thomas F. Foncannon and Oliver J. Corbett, all of Emporia, censors.

LOUISIANA

Quarantine Station Purchased.—The State Board of Health has sold to the United States government, for $100,000, the quarantine station at the mouth of the Mississippi.

Personal.—Drs. Charles M. Menville, Joseph B. Duval, and Hugh St. Martin have been elected members of the Houma Board of Health.——The New Orleans City Council has reelected Drs. William H. Robin, William T. O'Reilly, and Oliver F. Ernst members of the board of health.——Dr. and Mrs. Thomas L. Mills, Zachary, celebrated the fiftieth anniversary of their marriage, November 22.

Antituberculosis League Election.—At the annual meeting of the Louisiana Antituberculosis League, held December 9, the following officers were elected: Dr. Luther Sexton, New Orleans, president; Drs. George Dock and George S. Bel, New Orleans, vice-presidents; Dr. J. George Dempsey, New Orleans, secretary; and Dr. George S. Brown, New Orleans, treasurer. Drs. Clifford H. Irion, Benton, Edward L. McGehee, New Orleans, Charles Chassaignac, New Orleans, and Stanford E. Chailler, New Orleans, were elected honorary vice-presidents of the league.

Elections.—At the annual election of Orleans Parish Medical Society, held in New Orleans, December 11, the following officers were elected: President, Dr. Benjamin A. Ledbetter; vice-presidents, Drs. Eugene H. Walet, P. Leonce, Thibaut, and Charles N. Chavigny; secretary, Dr. Charles P. Holderith (reelected); treasurer, Dr. Howard D. King (reelected); librarian, Dr. Homer Dupuy (reelected), and directors, Drs. William H. Seemann, Arthur Nolte, and Joseph T. DeGrange, all of New Orleans.——Shreveport Medical Society held its annual meeting, December 7, and elected Dr. Oscar Dowling, president; Dr. Thomas P. Lloyd, vice-president; Dr. Arthur A. Herold, secretary (reelected), and Dr. John A. Hendrick, treasurer (reelected). A resolution was passed by the society denouncing the alleged practice of certain members of the society of issuing prescriptions for intoxicating liquors for other than medicinal purposes.

MARYLAND

Medical Corps to Be Organized.—Medical officers now serving with the regiments in the militia will be assigned to the medical corps as provided by the new state militia law, thus making the organization similar to that of the medical corps of the U. S. Army.

Health Department Banquet.—The ninth annual banquet of the health department of Baltimore was held December 28, Dr. James Bosley, commissioner of health being the guest of honor. Among the speakers were the mayor, Drs. Bosley, C. Hampson Jones, William R. Stokes, and Eugene H. Hayward.

Pure Food Laws.—A final public hearing of the advocates of the three pure food bills proposed for presentation to the legislature was given by the commission appointed by the governor, December 29 and 30. Wholesale drug men and representatives of the state medical society were not agreed regarding the administration of the law, the former opposing and the latter advocating its administration by the State Board of Health. After an animated discussion the following section was approved: "The State Board of Health shall have the power to appoint a pure food and drug commissioner at a salary of $2,500 a year, whose duties shall be exclusively the administration of this law under the direction and supervision of the said State Board of Health." This compromise section is said to be satisfactory to the various interests involved. At no time was there any expression of lack of confidence in the State Board of Health, and the secretary of the board was strongly endorsed by the attorney-general, by Dr. William H. Welch, and by Dr. James Bosley.

Organization of Home for Widows and Orphans of Physicians.—The board of managers of the Home for Widows and Orphans, founded by the Medical and Chirurgical Faculty of Maryland met for organization December 28. The members of the committee of the fund for the relief of widows and orphans of deceased members are considered members ex officio of the board. Rules for the government of the board were adopted. Great enthusiasm was manifested by the ladies who were honored by the society with the conduct and responsibility of this great charity, the first of the kind undertaken by a medical organization in America. The following officers were elected: Mrs. John S. Fulton, president; Mrs. Sophia Cook Waters, vice-president; Mrs. William B. McDonald, recording secretary; Mrs. E. L. Whitney, corresponding secretary; Dr. Eugene F. Cordell, treasurer; executive committee, Mrs. William J. Todd, Mrs. David Streett, Mrs. Nicholas L.

Dashiell, Miss Constance Kuch, and the officers ex officio. The board expects to have the home in operation in a few months. ——The Ladies' Auxiliary for the Fund for the Relief of Widows and Orphans is making arrangements for a supper, concert and sale to be held February 2 and 3.

MISSISSIPPI

Vital Statistics.—The legislative committee of the Mississippi State Medical Association has framed a bill creating a state bureau of vital and mortuary statistics and also a bill authorizing the state board of health to inaugurate a campaign of education and hygiene, and providing adequate appropriation therefor.

Amendment to Medical Practice Act.—Dr. Peter W. Rowland, Oxford, chairman of the legislative committee of the Mississippi State Medical Association has forwarded to the governor a bill which the latter is said to have approved, and which bars from application for license to practice medicine, all persons who have not completed a four-years' course in a reputable medical college, and regulates the compensation of county health officers.

Definition of the Practice of Medicine.—An amendment to the Medical Practice Act, proposed by the state medical association, thus defines the practice of medicine: "The practice of medicine shall mean to suggest, prescribe, recommend, or direct for the use of any person any drug, medicine, appliance or other agency whether material or not material, for the cure, relief, or palliation of any ailment or disease of the mind or body, or for the cure or relief for any wound or fracture or other bodily injury or deformity, or the practice of obstetrics or midwifery, after having received or with the intent of receiving therefor either directly or indirectly any bonus, gift, profit or compensation."

Medical Societies Meet.—The Newton-Neshoba-Winston Tri-County Medical Association, at its annual meeting held in Newton, elected the following officers: Dr. George H. McNeill, Newton, president (reelected); Drs. Joseph N. Whittle, Union, and W. D. Davis, Deemer, vice-presidents; Dr. Sidney A. Majure, Dixon, secretary-treasurer; Drs. Joseph N. Whittle, Union, Sidney A. Majure, Dixon, and Daniel J. Rush, Philadelphia, censors; Drs. William G. Allen, Newton, and Daniel J. Rush, Philadelphia, delegates to the state medical association, and Drs. Z. Carl Hagan, Decatur, and W. D. Davis, Deemer, alternates.——At the annual meeting of the East Mississippi Four-County Medical Association, held in Houston, Dr. Richard M. Boyd, Houston, was elected president; Dr. Andrew J. Brand, Buena Vista, vice-president for Chickasaw county; Dr. B. H. Durley, Aberdeen, vice-president for Monroe county; Dr. Thomas F. Elkin, Tupelo, vice-president for Lee county; and Dr. John T. Senter, Fulton, vice-president for Itawamba county.

MISSOURI

Superintendent Wins Judgment.—In the case of Dr. William F. Kuhn, formerly superintendent of State Hospital, No. 2, St. Joseph, for salary for the months of July and August, Judge L. J. Easton, on December 18, made an order that judgment be entered against the board of managers in favor of Dr. Kuhn for the amount demanded.

Physicians in Trouble.—Dr. L. W. Miller, Kirksville, is said to have been fined $800 by a jury, December 13, on four charges of illegally writing prescriptions for liquor.——Dr. Hume, Columbia, whose license to practice medicine was revoked by the State Board of Health, has appealed his case to the supreme court.——The State Board of Health, at its session December 7, is said to have revoked the license of Dr. J. Frank Gullic, Koshkonong, on account of drunkenness, and that of Dr. Calvareero Benedetto Tripirao, Kansas City, on the charge of practicing medicine with a diploma alleged to have been obtained fraudulently, and which he claimed had been issued by a college in Palermo, Sicily.——On the charge that he prescribed intoxicating liquor promiscuously, the State Board of Health has revoked the license of Dr. G. A. Meyer, Buffalo.

St. Louis

Cancer Research.—The directors of the St. Louis Skin and Cancer Hospital have made an appropriation of $6,000 a year for the study and investigation of the cause and treatment of cancer.

Annual Meeting of St. Louis Society.—The St. Louis Medical Society, at its annual meeting, December 27, elected the following officers: President, Dr. Henry Schwartz; secretary, Dr. Carroll Smith; treasurer, Dr. J. Henry Amerland; councilors, Drs. George Homan, Cyrus E. Burford, Robert M. Funkhouser, Henry C. Dalton, Walter H. Fuchs, Frederick C. E. Kuhlmann, Henry J. C. Sieving, Henry Schwartz, Albert F. Koetter, John C. Morfit, Clarence M. Nicholson, and William E. Sauer; delegates to the state association, Drs. William W. Graves, J. Henry Amerland, Thomas A. Hopkins, Herman L. Nietert, George C. Crandall, Vilray P. Blair, Louis H. Hempelmann, Louis Rassieur, Willard Bartlett, Walter Baumgarten, Joseph Gridon, Walter C. G. Kirchner, and Malvern B. Clopton, and alternates, Drs. Paul Y. Tupper, William E. Sauer, Frederick J. Taussig, Horace W. Soper, Jesse S. Myer, George Homan, E. Lee Dorsett, William G. Moore, William H. Luedde, Albert F. Koetter and Warren P. Elmer.

NEW JERSEY

Free Visits to Poor Only.—A committee of the Woodbury City Council conferred with the Woodbury Physicians' Association, on December 31, for the purpose of deciding on a method whereby the worthy poor of the city might be cared for free and not those who refuse to work. It is likely that in the future it will be necessary to secure an order from some official to get free medical aid, and then the city will pay a stipulated price to the physician.

William Pierson Library Lecture Course.—The William Pierson Medical Library Association announces the following lecture course: January 18, "Perversion of Stomach Digestion," Dr. George R. Lockwood, New York City; February 15, "Chronic Ulcer of Stomach and Duodenum," Dr. Max Einhorn, New York City; March 15, "Carcinoma of Stomach," Dr. Walter B. James, New York City, and April 19, "Surgery of Stomach," Dr. Joseph C. Bloodgood, Baltimore.

Personal.—Dr. Andrew F. McBride, mayor of Paterson, is reported to be ill with septicemia, due to an operation wound. ——Dr. Harry M. Harman has resigned as a member of the Frenchtown Board of Education, and has been appointed medical inspector of schools.——The citizens of German Valley have made up a purse for Dr. William James, who recently sustained serious losses in a fire.——Dr. Edwin E. Bond has succeeded Dr. David M. Gardner as health officer of Caldwell. ——Drs. Harry B. Slocum and William K. Campbell have been appointed medical examiners of school children for Long Branch.——Dr. J. Edward Blair, Burlington, is reported to be seriously ill with pneumonia.——Dr. Arthur H. Dundon, Plainfield, has succeeded Dr. Frederick J. Hughes as school physician.

NEW YORK

Sanitarium Burned.—The sanitarium of Dr. F. T. King, Little Farm, near White Plains, was burned to the ground, December 30, at an estimated loss of $20,000. The patients were all removed.

Efforts to Educate Defectives Unsatisfactory.—Leonard P. Ayres, lecturer for the Russel Sage Foundation, states that it costs New York City about $1,250,000 a year in a fruitless effort to teach children who are so handicapped by physical defects that their mental faculties are deadened. From two-thirds to three-fourths of all the pupils in the day schools suffer from physical defects, and in spite of physical examinations the defects go uncorrected. It has been observed that there are more accidents among backward than among normal children.

New York City

Brooklyn Health Department Moves.—The Health Department of Brooklyn moved, January 1, to the new municipal building, which is at the Flatbush avenue extension and Fleet place.

Appoint Coroner's Assistants.—The following assignments of coroner's assistants have been made for the ensuing year: Dr. Phillip F. O'Hanlon, Dr. Albert I. Weston, Dr. Otto H. Shultze and Dr. Timothy D. Lehane.

Harvey Lecture.—The fifth lecture of the present course of Harvey Society lectures will be given January 15 when Prof. Ludvig Hektoen, of the University of Chicago, will speak on "Certain Phases of the Formation of Antibodies."

Personal.—The East Side Physicians' Association has elected the following officers: President, Dr. William M. Leszynsky; vice-presidents, Drs. Max Ghertler and Sigmund Epstein; secretary, Dr. David Satenstein, and treasurer, Dr. Herman C. Frauenthal.——Dr. H. Holbrook Curtis was the guest of honor at a dinner at the Harvard Club on December 28, given by his former assistants and associates who are now residing in New York City. The party consisted of Drs. George E. Brewer, David O. Edson, Wm. Ledlie Culbert, Percy E. D. Malcolm, Nathaniel B. Potter, Hampton P. Howell, Rufus P. Hubbard and Lawrence D. Alexander.

Low Death Rate for 1909.—Dr. Darlington announces that the death rate in this city for the year 1909 was the lowest ever recorded officially. The rate was 16.24 per thousand population, while for the preceding year the rate was 16.52. There was a falling off in the number of deaths from typhoid fever and measles, but an increase in the number of deaths from scarlet fever, diphtheria, influenza, tuberculosis and organic disease.

Alumni Association Prize.—The Prize of the Alumni Association of the College of Physicians and Surgeons, Columbia University, is a biennial prize valued at $500 open for competition to the alumni of this college and is awarded for the best medical essay submitted on any subject. The essay must contain the results of original investigations made by the author. The prize will be awarded at commencement, 1910, and essays must be sent in before April 1.

NORTH CAROLINA

Medical Men Elect Officers.—At the annual meeting of the Iredell-Alexander County Medical Society, held in Statesville, December 6, the following officers were elected: Dr. William G. Nicholson, Harmony, president; Dr. Archibald A. Campbell, Statesville, vice-president; Dr. John E. McLaughlin, Statesville, secretary-treasurer, and Dr. E. E. Kluttz, Troutman, delegate to the state society.——Yadkin County Medical Society, at its annual meeting, December 6, elected Dr. Calvin M. Holcomb, Chestnut Ridge, president; Dr. Thomas R. Harding, Yadkinville, vice-president, and Dr. John L. Woltz, Booneville, secretary-treasurer, and delegate to the state society.

Decision for Hospital.—More than two years ago, after a most atrocious crime had been committed by a lunatic recently discharged by order of the directors from the State Hospital at Morganton, a suit for damages was instituted against the directors by friends of the deceased. The case was fought through the lower courts and was last week decided in favor of the directors. The order reads: "The directors and superintendent of a hospital for the insane under the provision of Revisal 4596 in discharging or releasing a patient therefrom cannot be held responsible for damages by the subsequent killing of such a patient by another, under the charge of negligence, Revisal 4560."

PENNSYLVANIA

Antituberculosis League Election.—At the annual meeting of the Wilkinsburg Antituberculosis League, December 14, Dr. Theodore Baker was elected corresponding secretary, and Drs. Clyde W. Semple, James M. McNall, David B. Beggs, Stewart L. McCurdy and Silas G. Wertz, directors.

Nurses Registered in Pennsylvania.—The State Board for the Registration of Nurses announces that it has no affiliation with any other board, society, hospital school or sect of medicine. Its object is to protect the public and the medical profession against persons not properly educated for the responsibilities of a nurse. The board at its recent meetings granted registration to 485 applicants. These, by Act of Assembly, approved May 1, 1909, are privileged to use the title "registered nurse" or its abbreviation, R.N., and to wear the pin authorized by the board.

Personal.—Dr. Jason G. Hanks, Breezewood, Pa., while making a professional call, December 18, was thrown from his automobile, breaking his collar bone, ribs, and receiving severe contusions.——Dr. Jacob Rothrock, manager of the Mont Alto Sanatorium, has been selected as superintendent of the new sanatorium to be built by the Reading Society for the Prevention of Tuberculosis, at Neversink Mountain.——Dr. J. Paul Roebuck, Lititz, has been appointed physician to the eye, ear, nose and throat department, Dr. D. Galen McCaa, Lancaster, pathologist, and Dr. Walter B. Weidler, Lancaster, consultant to the eye, ear, nose and throat department of the Lancaster General Hospital.

Philadelphia

Neurologists Hold Joint Meeting.—A joint meeting of the Philadelphia Neurological Society and the New York Neurological Society was held December 18, in Thomson Hall, College of Physicians. The meeting was followed by a smoker at the Rittenhouse Hotel. A report will appear in THE JOURNAL.

Personal.—John A. Vogelson, an engineer of construction in the filtration division of the bureau of water, was appointed, December 31, chief of the bureau of health vice Dr. Alexander C. Abbott, resigned.——Dr. Mary M. Wolfe has been appointed professor of psychiatry in the Woman's Medical College. Dr. Wolfe was until recently resident physician at the women's department of the Norristown State Hospital for the Insane.

German Hospital Surgical Conference.—The physicians visiting the surgical clinic of the German Hospital have formed a society to be known as the German Hospital Surgical Conference, which has as its objects "the advancement of its members in the science and art of medicine and the promotion of a free and open discussion of cases presented, of operations performed, of methods, technique and treatment used in the German Hospital surgical clinic." Regular meetings will be held at the German Hospital on Tuesday and Friday afternoons of each week at 3 p. m. and at each meeting a special reporter will present a résumé of the work done in that clinic during his term of service. The following officers were elected: President, Dr. Luther Williams, Indianapolis; vice-president, Dr. Alexander, Annapolis, Md., and secretary-treasurer, Dr. Albert D. Whiting, Philadelphia.

Officers Elected.—At a meeting of the North Branch of the Philadelphia County Medical Society held December 21, Dr. Samuel P. Gerhard was elected chairman and Dr. Jesse O. Arnold, clerk.——The Kensington Branch of the Philadelphia County Medical Society elected the following officers: Chairman, Dr. Thomas R. Currie; vice-chairman, Dr. John J. Gilbride, and clerk, Dr. Harry S. Bachman.——At the meeting of the West Philadelphia Medical Association, the following officers were elected: President, Dr. Sherman F. Gilpin; vice-president, Dr. Hiram L. Lutz; secretary, Dr. Henry G. Munson; financial secretary, Dr. William M. Miller, and treasurer, Dr. Edmund L. Graf.——At a meeting of the South Branch of the Philadelphia County Medical Society, December 30, the following officers were elected: President, Dr. William N. Bradley; secretary, Dr. Joseph S. Kitchen, and associate vice-president to the county medical society, Dr. R. Oliver Kevin.

SOUTH CAROLINA

Smallpox on Board Steamer.—The British steamer *Winifred* is being held at the quarantine station, Charleston, with one case of smallpox and two suspicious cases on board.

Antituberculosis League Formed.—The physicians of Lexington county have formed a temporary antituberculosis league with Dr. Ransom H. Timmerman, Batesburg, president, and Dr. G. Frank Roberts, Lexington, secretary.

Elections.—At the annual meeting of Anderson County Medical Society, in Anderson, December 6, the following officers were elected: Dr. James R. Young, president; Dr. R. Lee Sanders, vice-president; Dr. W. Frank Ashmore, secretary-treasurer, and Dr. Joseph O. Wilhite, censor, all of Anderson.——Florence County Medical Society, at its annual meeting, held in Florence, December 6, elected Dr. John G. McMaster, Florence, president; Dr. Dudley H. Smith, Florence, vice-president; Dr. Edward M. Allen, Florence, secretary-treasurer; Dr. Albert G. Eaddy, Timmonsville, delegate to the state association, and Dr. Lawrence Y. King, Florence, censor.——At the annual meeting of Chester County Medical Society, held in Chester, December 6, Dr. William B. Cox, Chester, was elected president; Dr. Samuel G. Miller, Chester, vice-president; Dr. W. R. Wallace, secretary-treasurer, and Dr. John P. Young, Richburg, delegate to the state association.——Columbia Medical Society, at its annual meeting, December 13, elected Dr. Samuel E. Harmon, president; Dr. Robert A. Lancaster, vice-president; Dr. Mary R. Baker, secretary, and Dr. Francis A. Coward, delegate to the state association.——Williamsburg County Medical Society held its annual meeting in Scranton, December 21, and elected the following officers: Dr. Irvine M. Woods, Sardinia, president; Dr. Thaddeus B. Hinnant, Lake City, vice-president; Dr. Edward T. Kelley, Kingston, secretary; Dr. Clarence D. Rollins, Lake City, treasurer; Drs. William S. Lynch, Scranton, and S. B. W. Courtney, Lake City, censors; Dr. Clarence D. Rollins, Lake City, delegate to the state association meeting, and Dr. Juline D. Eaddy, Lambert, alternate.——Clarendon County Medical Society, at its annual meeting, held in Manning, December 22, elected Dr. Charlton E. Gamble, Turbeville, president; Dr. A. S. Todd, Manning, vice-president; Dr. Charles B. Geiger, Manning, secretary-treasurer; Dr. A. S. Todd, Manning, delegate to the state association, and Dr. Henry L. Wilson, Jordan, alternate.

WASHINGTON

Medical Societies Incorporate.—The incorporation is announced of the Washington State Medical Association by Drs. William D. Kirkpatrick, Bellingham, O. Lewis Adams, Davenport, Burt Thomas, Walla Walla, et al., and the King County Medical Society, of Seattle, by Drs. Grant Calhoun, Robert M. Smith, and Louis H. Redon, et al.

Antituberculosis Activities.—The Antituberculosis League of King county has purchased eighty acres of land on the east side of Lake Washington, on which to erect a sanatorium to accommodate sixty tuberculosis patients. Dr. Robert M. Stith is to be medical director of the institution.——As the result of the sale on Button Day, more than $6,000 was raised in Seattle for the relief of sufferers from tuberculosis.

Children's Hospital.—The plans for the proposed Children's Orthopedic Hospital, Seattle, have been prepared. The new building is to cost $75,000, of which $63,350 is already available. The hospital is urgently needed, as during October and November, 8 crippled children were refused admittance on account of the crowded condition of the present quarters.

Personal.—Dr. William F. Armann, Ritzville, has returned from abroad.——Dr. Marion F. Setters, Spokane, who is said to have been temporarily suspended two months ago for alleged unprofessional conduct in advertising a sanitarium in the lay press in connection with an unlicensed practitioner, was reinstated on bringing proof before the board showing that he had severed his relations with the practitioner referred to and with the sanitarium.

Society Meetings.—At the annual meeting of Whatcom County Medical Association, held in Bellingham, December 13, the following officers were elected: Dr. John W. Goodheart, Bellingham, president; Drs. C. Beebe, D. S. Clarke, and Ernest S. Reedy, Blaine, vice-presidents; Dr. H. Max Mehlig, Bellingham, secretary; and Dr. George F. Cook, Bellingham, treasurer.——At the third annual banquet of the Spokane County Medical Society, December 20, the guest of honor was Dr. Darius Mason, Spokane, a practitioner of fifty-six years' experience. Dr. Harold H. McCarthy, Spokane, was toastmaster, and 125 members of the profession of Spokane and the neighboring district were in attendance. Dr. Wallace W. Potter, Spokane, responded to the toast, "Our Guest."

How the Plague Problem was Handled in Seattle.—The occurrence of three cases of bubonic plague in Seattle in October, 1907, caused a campaign of cleaning to be instituted by the Public Health and Marine-Hospital Service, and also induced the city to reorganize its health department. The present head of that department is Dr. James F. Crichton, who was appointed in March, 1908, for five years. He is given ample authority to enforce the health ordinances of the city, and in its organization the department ranks with the best. The city maintains a chemical and bacteriologic laboratory and the plague laboratory conducted by the Public Health and Marine-Hospital Service is also maintained by the city. There is inspection of markets, milk and other foods, contagious diseases are reported and quarantined in the case of smallpox, diphtheria, scarlet fever and plague, and the occurrence of a case of contagious disease is reported by the health department to the police department, the superintendent of schools and the public library, with the location of the case. The population is 276,000, and the death rate, on the reorganization of the health department, dropped from 9.27 in 1907 to 7.35 per 1,000 in 1908. The low death rate may be attributed in part to the fact that the population is largely of the pioneer class, young and strong. Tuberculosis is the most frequent cause of death, there being 218 cases in 1908. The city maintains a charity hospital of 56 beds and also a contagious disease hospital, although there is urgent need for a larger one. There are a number of private hospitals, but further hospital accommodations are needed. The city water supply comes from the Cedar river and is brought by gravity 28 miles from an elevation of 6,000 feet. The water is good and contains from 70 to 4,000 bacteria per c.c., being greatest in the rainy season. The city has 5 miles of water front mostly occupied by wharves of cheap timber construction, and sanitation, particularly against rat plague, is difficult. However, no plague has been discovered among rats since September, 1908. The subject of building a sea wall and filling the space inside has been agitated, but there are difficulties in the way. The sewage is disposed of by the gravity system, being discharged far out in the sound. The city produces 200 tons of garbage daily, and maintains at present one incinerator with a capacity of 70 tons. The rest of it is dumped into the sound or in the low places about the city. This is one of the sanitary questions demanding attention as is also that of a larger contagious disease hospital. The ever present danger of bubonic plague invasion requires unceasing vigilance, as it does in all the Pacific coast towns.

GENERAL NEWS AND COMMENT

Medical Journal for the Laity.—We have received the first issue of the *Layman's Medical Journal*, to which we referred December 18. This little monthly magazine is published by the Wisconsin Medical Woman's Association, Oshkosh, for the education of the public in matters of health. Subjects to be considered are: "Hygiene, sanitation, water, milk and food supplies, and the knowledge of preventable diseases." The first number contains articles on the fight against tuberculosis, prevention of scarlet fever, duty of the physician to the school child, sanitation, and ventilation, besides a number of useful hints regarding such common ailments as frost bite and catching cold. There is a question corner and subscribers are encouraged to ask questions concerning health.

Typhoid in Bermuda.—"The Spectator" in the *Outlook*, December 11, after describing the beauties and advantages of the Bermuda Islands as a resort, says "the single drawback to a summer in Bermuda is the ever present possibility that a typhoid germ in active health may be wending its silent way into one's insides." He goes on to say that the disease has been endemic in the islands for a century past and is very prevalent. Even the cultured Englishmen on the island show an astonishing ignorance of its causes and the methods of its prevention. There are few screens in the windows and millions of flies. The sanitary arrangements are apparently poor, and, while the law requires water tanks to be screened, it is often done with a half inch mesh, which would of course keep out cats and dogs but not mosquitoes or other germ-carrying insects.

A Peerless Champion.—Under this title, *Collier's Weekly* for December 25 has the following comment on one of the leaders in the movement against animal experimentation, whose zeal in the cause is only equalled by his superb disregard for facts: "The antivivisectionists are planning a grand coup. They are about to send the most eminent antivivisectionist in the world to visit us—Hon. Stephen Coleridge. He is the son of the late Lord Chief Justice of England. He has done in his lifetime several ungentlemanly and several misleading things which makes it unfortunate that he should be selected as a representative of a cause. He was, for instance, guilty of trying to ally the British Museum with his own personal propaganda by means of a cheap and somewhat ungentlemanly trick. He asked the librarian in the British Museum to give him a competent translator, to translate for him a catalogue of one of the physiological instrument manufacturing companies. He then put on the title-page of the translation the title of the librarian in the British Museum, as if lending favor to his antivivisection crusade. The librarian called what Mr. Coleridge had done an 'unwarrantable abuse of a mere act of courtesy.' Another time Mr. Coleridge, without investigation, saw fit to repeat the wild and picturesque statements of the beautiful Miss Lind-af-Hageby. She had claimed to have seen many quaint and piteous happenings inside the laboratory of Dr. Bayliss, University College, London. Her remarks, fortunately, were confined to private life. But Mr. Coleridge eagerly trumpeted them forth from a platform. He was sued by Dr. Bayliss and had to pay heavy damages, to the extent of nearly $25,000— £2,000 for damages and nearly £3,000 for trial costs—for his falsification. Many instances of his false statements and his gift for twisting facts into malicious fiction will be found in the blue-books of the proceedings of the Royal Commission on Vivisection. This is the gentleman who will so shortly visit us and continue his romancing on an important department of science."

CANADA

Tuberculosis Fund Doubled.—The government has decided to appropriate $10,000 annually, instead of $5,000, to prevent the spread of tuberculosis.

Children's Hospital.—The Children's Hospital at Halifax, N. S., celebrated Children's Day, December 22. The hospital was opened for inspection December 20. The institution can accommodate 14 patients, but can be made to accommodate 23 patients.

Hamilton Physicians Meet.—The annual meeting and dinner of the Hamilton Medical Association was held December 1. Dr. Douglas G. Storms was elected president; Dr. John P. Morton, vice-president; Dr. Alexander D. Unsworth, corresponding secretary; Dr. Daniel P. Kappele, recording secretary, and Dr. Marshall E. Gillrie, treasurer.

Personal.—Dr. Oscar Klotz, assistant in pathology at McGill University, Montreal, has been appointed professor of pathology in the University of Edinburgh.——Dr. Abraham K. Malouf, Montreal, has been elected president of the Letellier Club.——Dr. James M. McCarter, Verona, is reported to be ill in Kingston Hospital with typhoid fever.——Dr. Robert J. Manion, health officer of Fort William, Ont., has resigned.

Names Stricken from Roll.—By a vote of 17 to 7, the council of the Ontario College of Physicians and Surgeons, on December 10, is said to have decided that Dr. William R. Cook, Toronto, was guilty of "infamous and disgraceful conduct in a professional respect," and that "his name be erased from the register of the college forthwith."——On the same day the council decided to strike from the register the name of Dr. Stephen B. Pollard, who is now said to be serving five years' imprisonment for the performance of a criminal act.

Dominion Registration.—At a special session of the Ontario Medical Council, held in Toronto, December 11, the proposed amended Roddick or Canada Medical Act was presented and affirmed. The amendment to this act was the result of a meeting of the special committee on dominion registration, held in Montreal, through whose act the principle was reaffirmed, the Quebec delegates alone standing out against the act as at present on the statute book, objecting chiefly to what would purport to be the infringement of provincial rights in the matter of education and examination. The composition of the proposed dominion council is as follows: Three members from each province, appointed by the governor-in-council; a number of members representing each province, fixed in each case by the number of practitioners registered under the laws of the province in the proportion of one for the first 500, one for the next 1,000 or fraction thereof, and for all over 1,000, one, and never more than three; one from each university or incorporated medical college engaged in the active teaching of medicine; and one member to be appointed by the governor-in-council or elected from the members of any distinct school of medicine who are entitled to practice by the laws of any province. The amended bill also provides for the first meeting in Ottawa, appointment of registrar, and reciprocity with Great Britain. Any person who has practiced six years in any province of Canada may, on payment of the necessary fees, be registered to practice in any province.

Milk Defined.—The government has prepared a scheme for proposed food standards which classifies milk and its products, as milk, modified milk, skim milk, pasteurized milk, sterilized milk, certified milk, condensed milk, and evaporated milk. The standard for pasteurized milk is milk which has been maintained for twenty minutes at a temperature of 150 F. or thirty minutes at a temperature of 140 F., and immediately thereafter refrigerated to 45 F. and kept at that temperature until delivered to the consumer; certified milk is described as milk examined and guaranteed by any local board of health or incorporated society or association of legally qualified medical practitioners. Cows are to be subjected to the tuberculin test semiannually and be found without reaction. Milk must contain not more than 10,000 bacteria per cubic centimeter, must be free from pus, blood, preservatives and all foreign matters, and must not have been heated.

FOREIGN

New Queen of Belgium a Physician.—The wife of the new king of Belgium is the daughter of the late Duke Karl Theodor of Bavaria, whose death we recorded Dec. 11. She always took great interest in her father's scientific work and used to assist him in his eye clinic and hospital. She early announced her intention to study medicine, but it met with strenuous opposition on the part of all her relatives with the exception of her father. Under his encouragement she began to study medicine with him at the age of 16 and completed her course, obtaining her medical degree at Leipsic, not long before her marriage. She continued her medical studies in Brussels, and founded there the Albert-Elizabeth tuberculosis dispensary, which has been doing excellent service in prevention and cure of tuberculosis among the poor. Until her recent accession to the throne she was a daily visitor and took an active part in its work.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Dec. 25, 1909.

Extension of the Work of a Medical Defence Society

At present there are two medical defence societies in this country. On payment of a subscription of $2.50 per annum the defence of a physician will be undertaken against actions brought against him by patients for negligence. Such actions are usually vexatious or speculative and brought with the aid of unscrupulous lawyers, by patients who have no money. If the physician wins a verdict with costs he is unable to recover from an impecunious plaintiff. The result has been that in addition to the worry of litigation the physician has to pay a considerable sum, sometimes as much as $5,000, to defend himself against a baseless charge. Membership of a medical defence society relieves him of this and often prevents such actions, when the patient and his lawyer find that the physician has a strong society at his back which cannot be intimidated. But if the physician is unfortunate enough to lose his case all that the society will do is to pay the costs of his defence. He will be liable for any damages and costs which may be given against him. For some time the London and Counties Medical Protection Society has been considering the advisability of arranging for an insurance of the members against damages and costs up to $10,000, but the proposal received little support from the members. Circulars and requests to attend a meeting for the purpose received only a small number of positive replies and fewer negative ones, the majority of the members not replying at all. To do this it would be necessary to raise the subscription to $5. After a long discussion the society has now decided to arrange with an insurance company for a policy covering these risks. The council of the society will strictly guard their rights to conduct the trials in what way they think proper.

Dentists and the Royal College of Surgeons

The Royal College of Surgeons has celebrated the jubilee of its recognition of dentistry as a profession and institution of the licentiateship in dental surgery (L.D.S.). Fifty years ago the practice of dentistry in this country was in a chaotic condition and much behind that in America. There was no recognized dental diploma and druggists and even artisans practiced dentistry and described themselves as dentists. The college was the first licensing body in the United Kingdom to institute a diploma in dentistry. In the fifty years which have elapsed great progress has been made and dentistry has ceased to be merely an art and been transformed into a science taking rank with ophthalmology, laryngology and the other specialized branches of medical science. This progress has been largely due to the work of the Odontological Society which has now become merged as one of the sections of the Royal Society of Medicine. It accumulated a magnificent collection of 5,000 specimens, probably the most extensive and valuable ever brought together to illustrate the anatomy, embryology and pathology of the teeth. This collection includes the original specimens of pigs' teeth by which John Hunter demonstrated by administration of madder that the teeth are laid down layer by layer with the growth of the body. These specimens were used by Hunter for the preparation of his book on "The Natural History of the Human Teeth," published in 1771. There are specimens of early English skulls side by side with modern specimens showing that the crowded uneven teeth so common at the present day are due to a decrease in the size of the jaws with the advance of civilization. A similar contrast is shown by comparing predynastic Egyptian skulls with those of the civilized ages of the Egyptian kings. The jaws and teeth of 1,500 species of animals from fossil fishes to the monkey are represented. Sets of artificial teeth from the first crude attempts in 1790 up to the perfect specimens of the dental art of the present day are exhibited. This invaluable collection has now been transferred to the keeping of the Royal College of Surgeons. It is housed in a large room in the basement with the dental specimens already in the museum of the college.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Dec. 23, 1909.

Lecture of Dr. Debove on the Rôle of Medicine

Professor Debove, former dean of the Paris medical school, gave some time ago at the School of Higher Social Studies, an interesting lecture on the rôle of medicine. To-day, said Dr. Debove, there are certain medical concepts of which no one has the right to be completely ignorant. The philosopher is particularly interested in mental pathology. It should be no longer possible to study philosophy without knowing a little of anatomy and physiology. We have decentralized the faculties of the mind and we know that it is not the brain alone which exercises an influence on the mentality of the individual. The intellectual and moral faculties may be influenced by an alteration of the suprarenal capsules or of the thyroid gland. These concepts are such as to modify our ideas in regard to human responsibility. It is necessary then that the philosopher should be somewhat of a physician; but it is also necessary that the physician should be somewhat of a psychologist, for how many moral diseases he is called on to treat! One division of morality is only a branch of medicine, namely, that which relates to the conservation of the race and to reproduction of the species. Dr. Debove par-

ticularly emphasized the dangers of depopulation, which are increasing each year in France.

He then pointed out the importance of medicine in war. Statistics prove that in war disease is an important factor. In 1870 we lost 23,470 from variola while the Germans lost only 450, which shows how important it is that commanders of armies should take medicine into account. In closing Dr. Debove dwelt on the evil effects of the great poisons of the human race: opium, alcohol, etc. In order to combat the lamentable condition created by alcoholism in particular, Debove recommends early school instruction in hygiene. By showing children all the dangers of alcoholism, which peoples our insane asylums and our prisons and which is unfavorable to the reproduction of the species, it may be possible to make young people shun alcohol. It is necessary also to educate the people in regard to tuberculosis and while insisting on the precautions to be taken against tuberculosis, Dr. Debove made a strong argument in favor of the compulsory reporting of tuberculosis.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Dec. 15, 1909.

Personal

Prof. P. Krause, lately appointed professor extraordinary and head of the medical policlinic at Bonn, who has distinguished himself by investigation of the prevailing epidemic of acute spinal paralysis in the Rhine country and Westphalia, has been made a regular professor.

As successor of Prof. H. Kossel, Prof. R. Neumann of Heidelberg has been appointed director of the hygienic institute at Giessen.

Dr. Holle, formerly minister of education, who was compelled by illness to abandon his post a year or so ago, after a brief incumbency, has now succumbed to his disease, a severe brain affection of an arteriosclerotic nature, developing in consequence of the great pressure of work involved in the activities of the department of education. He was only 54 years old.

Dr. Jastrowitz, of Berlin, a well-known physician for mental diseases, celebrates his seventieth birthday on the twentieth of this month. The *Verein für innere Medizin*, whose secretary Jastrowitz was for many years, has elected him an honorary member.

Dr. R. Lennhoff, one of the founders of the forest convalescent stations mentioned in my former letter, has received the title of professor. He is the editor of the *Medizinische Reform*, a weekly journal devoted to social medicine and hygiene, and has won distinction for his systematizing and practical development of social medicine.

Municipal Medical Affairs

The city has made a supplementary appropriation of $24,000 (100,000 marks) for treatment at sanatoriums (*Heilstättenkuren*).

The board of aldermen has asked the administration to provide as soon as possible for the erection of large, simply constructed forest convalescent stations for weakly children of both sexes, to be opened the entire year.

The city government has decided to erect at Rummelsburg, a suburb of Berlin, a hospital with 150 beds for patients with female diseases.

International Institute for Medical Bibliography

An international institute for the bibliography of medicine and the related natural sciences has just been founded and is to publish a central organ which shall abstract the entire medical literature. In addition there is to be established an information bureau for questions regarding medical and scientific literature. Professor Aberhalden of Berlin is to be the editor of the *Centralblatt* in question.

Infant Mortality in Prussia

The infant mortality of Prussia after a temporary decrease before 1908 shows now a slight increase. Of 1,000 legitimate children born living there died in the first year of life in the cities 157 as contrasted with 154 in 1907; in the country 166 instead of 162. The average from 1886 to 1890 was 210 in the cities and 187 in the country; from 1896 to 1900, 195 and 185, and from 1901 to 1905, 181 to 178. It is evident that the infant mortality has been materially reduced and further that it has decreased to an extent distinctly greater in the city than in the country so that the infant mortality is now generally smaller in the cities than in the country. The chief reason for the more marked reduction of infant mortality in the cities is to be sought in the greater improvement in the hygiene and care of infants in the cities as compared with the rural districts. Others attribute the difference to the marked reduction of the birth rate in the cities; the extra fertility of the country women tends to lessen the consciousness that infants need special care. Furthermore, the removal of part of the infants, shortly after birth, from the city to the country tends to increase the death rate of the country and to lessen that of the cities. The two latter factors, however, are surely of minor importance compared with the former. The death rate of illegitimate children, which as is well known always surpasses that of the legitimate children, after a previous marked decrease shows an increase as compared with the previous year, the figures being 291 (in 1907: 281) in the cities, and 307 (1907: 205) in the country. The average from 1891 to 1905 was 385 for the cities and 336 for the country; from 1901 to 1905, 329 for the cities, and 322 for the country.

Marriages and Births in Germany

While for the last twenty years the number of marriages has about paralleled the increase of the entire population, the birth rate shows a menacing decrease. Since 1896, the birth rate has dropped about a fourth. In 1888, with a population of 48,168,000 the number of marriages was 376,654 and the number of births 1,828,379 (of which 66,972 were still-births). In 1898, with a population of 54,406,000, the number of marriages was 458,877, and of births 2,891,000 (65,960 still-births). In 1907 the population was 62,083,000, the marriages numbered 503,964 and the births 2,060,973 (61,040 still-births).

Outdoor Schools for Higher Grades

Charlottenburg will found in Grünewald an outdoor school for children of the upper grades. The school is to open in the middle of April and continue until the summer vacation and then be resumed until the end of September. During the summer vacation the forest school will be rented as a vacation colony. With this rent and with the tuition money it is hoped to meet the expenses of maintenance which are estimated at $8,000 (32,500 marks). The tuition is placed at $70 (290 marks) for each pupil, and the school is planned to accommodate 120. Free tuition is to be provided for some pupils and for this purpose the city of Charlottenburg will assume one-fifth of the expense. The cost of the establishment of the school was provided by a private benefactor who contributed $8,500 (35,000 marks).

Bills in the German Reichstag

For the present session of the Reichstag a large number of bills dealing with public hygiene and education have been presented by the various parties. These bills are submitted for discussion in the Reichstag and after their adoption are laid before the federal council for further action. A bill has been introduced providing for united action by the individual state governments of the empire by which the threatening influx of foreign students to the German universities shall be restricted in the interests of our own people. (This has to do principally with the increase of Russian students who, without sufficient preparatory studies, often crowd the German universities, and by securing the best places thus discommode and injure the German students.)

In regard to housing reform, the imperial chancellor is requested to appoint a committee from the official representatives of the kingdom and the various federal states and from the members of the Reichstag and from others who have scientific and practical knowledge of the housing question, to develop a uniform plan for the settlement of this problem. In addition the imperial chancellor is to be requested to prepare a bill for a law to provide for persons accidentally injured in the saving of persons or of goods, especially in voluntary aid at fires and in drownings. Also a bill to ensure a successful campaign against tuberculosis in those classes of the population especially affected with this disease; particularly in reference to ways and means for disinfection of infected dwellings.

Centennial of the Hufeland Society

February 1, 1910, the *Hufelandische Gesellschaft* of this city celebrates its centennial. The society was founded by the renowned Hufeland who was the first professor of medicine at the university which was established in 1810. The jubilee of this society is also to a certain extent the first event in the centennial of the Berlin university itself which, as previously mentioned, is to be celebrated next August.

Pharmacology

THE AMERICAN DRUGGISTS SYNDICATE

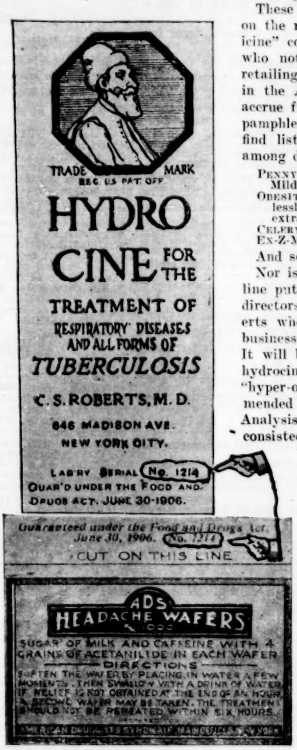
An Arrangement Whereby Retail Druggists Become Wholesale Nostrum Manufacturers

For years the manufacturers of "patent medicines" have been reaping a golden harvest at the expense of the public's purse and health. Naturally those druggists who think more of profits than pharmacy and dollars than decency have, to a large extent, participated in the dividends of the nostrum exploiters in the capacity of distributors. More recently, however, the growth of "department store" druggists and other "cut rate" concerns have made serious inroads on the profits to be realized by the sale of "patents." This loss of profits, in turn, has led many of the none-too-particular druggists to take stock in one or the other of the cooperative enterprises that have entered the field to "out-Herod Herod" in the matter of exploiting ready-made remedies to cure all diseases that human flesh is heir to.

Of these organizations, one of the most impudent in its claims and obnoxious in its methods is the American Druggists Syndicate, more euphoniously known as the A. D. S. This concern, which has been referred to before in THE JOURNAL,[1] was founded by one C. H. Goddard, formerly a newspaper man in California and interested in the mining business. According to the advertisements, the A. D. S. is an association of retail druggists "who are daily compounding thousands of prescriptions written by the most eminent physicians of the country."

> "They not only compound these prescriptions, but they are in daily contact with the patients, and thus have an opportunity of watching their results and those which prove the very best by practical tests are forwarded by each druggist member to the A. D. S., and from the thousands presented, a competent board of physicians and chemists select the premium prescription and offer it to the public in a ready-made package."

Despite all that has been said about the general harmfulness of ready-to-take panaceas, and despite all of the positive knowledge that we now have regarding the immediate, as well as the remote damage done by taking "patent medicines," we have here the appalling evidence that a very large number of retail druggists, men that should and no doubt do know at least something of the harm that is being done by nostrums, are openly cooperating in the manufacture and exploitation of nostrums! Baldly stated in their own words: "The American Druggists Syndicate Places the Profit Side of the Patent Medicine Business Where it Belongs"—that is with the retail druggist.


TRADE MARK
REG. U.S. PAT. OFF.
HYDRO
CINE FOR THE
TREATMENT OF
RESPIRATORY DISEASES
AND ALL FORMS OF
TUBERCULOSIS
C. S. ROBERTS, M. D.
646 MADISON AVE.
NEW YORK CITY.
LABEL SERIAL No. 1214
GUAR'D UNDER THE FOOD AND
DRUGS ACT. JUNE 30-1906.
Guaranteed under the Food and Drugs Act. June 30, 1906. No. 1214
CUT ON THIS LINE
ADS
HEADACHE WAFERS
SUGAR OF MILK AND CAFFEINE WITH A
GRAINS OF ACETANILIDE IN EACH WAFER
DIRECTIONS
SOFTEN THE WAFERS BY PLACING IN WATER A FEW
MOMENTS, THEN SWALLOW WITH A DRINK OF WATER.
IF RELIEF IS NOT OBTAINED AT THE END OF AN HOUR
A SECOND WAFER MAY BE TAKEN. THE TREATMENT
SHOULD NOT BE REPEATED WITHIN SIX HOURS.

Photographic reproduction of two labels; one from a "headache cure" put out by the A. D. S., the other from a "consumption cure" (Hydrocine, now called Oleozone), exploited by C. S. Roberts, one of the original directors of the A. D. S. Notice that the serial number on the two labels is the same, indicating a common source.

These preparations are objectionable because they tend to mislead and harm the purchaser, degrade the morals of the men who make and sell them, and discredit all who are in any way connected with the drug business, or with pharmacy.

As an illustration of the generally objectionable nature of these preparations we would call attention to:

> A. D. S. PELVITONE: "A blessing to weak women. A purely vegetable compound." "Is the prescription used by the most eminent and successful physicians. " . . . was selected . . . by an association of three thousand successful druggists." "Try one bottle and you will recommend it to your afflicted lady friends."

Is this ethically, morally, or scientifically on a higher plane than the Lydia Pinkham or the Pierce nostrums?

> A. D. S. HEADACHE WAFERS: "This prescription was selected from a thousand as the very best, most effective and safest remedy on earth for headache." "Will positively relieve you and not hurt the heart." [Each wafer contains four grains of acetanilid!—Ed.]

Wherein is this better than the thousand-and-one other headache cures that flood the nostrum market?

> A. D. S. BRAIN AND NERVE TONIC: "It feeds both brain and nerves." "A scientific nerve food." "It never fails."

Truly a scientific (?) preparation. The courts of the District of Columbia have decided that the words "brain food" are "false and misleading."

These are but examples of the preparations put on the market by this cooperative "patent medicine" concern—a concern comprised of druggists who not only get the regular commission for retailing these nostrums, but who, by owning stock in the A. D. S., participate in the profits that accrue from their manufacture. In the advertising pamphlets distributed by the A. D. S., we also find listed "A remedy for every ailment," and among dozens of others, the following:

> PENNYROYAL PILLS: "For female irregularities. Mild and safe."
> OBESITY REMEDY: "Removes fat slowly and harmlessly." [Harmless? Asserted to contain thyroid extract!—Ed.]
> CELERY COMPOUND: "Great for nervous disorders."
> EX-Z-MO: "It will cure eczema."

And so on *ad nauseam*.

Nor is the "patent medicine" business the only line put out by the A. D. S. One of the former directors of this organization was Dr. C. S. Roberts whose activities in the "consumption cure" business THE JOURNAL has had occasion to expose. It will be remembered that Dr. Roberts exploits hydrocine (now called oleozone), the marvelous "hyper-oxidized hydrocarbon" which he recommended as "a positive cure for tuberculosis." Analysis of Dr. Roberts' product disclosed that it consisted of 95 per cent. sugar and small quantities of volatile oils and a trace of pancreatin. This mal-odorous sugar mixture is now manufactured in the A. D. S. nostrum factory as the reproduction of the hydrocine label shows.

One of the advertising schemes of the A. D. S. is the sending out of a Pullman car containing an exhibit of A. D. S. products. This advance agent of the nostrum manufacturers was labelled "A Druggist Organization for the Protection of the Public Health!" After this, can we blame Dr. Hartman, of Peruna fame, and Lydia Pinkham, for posing as public benefactors?

Summed up, what does it all mean?

It means that the druggists constituting the A. D. S. are concerned not with scientific pharmacy, but with the marketing of nostrums.

It means that the filling of physicians' prescriptions is being utilized by many retail druggists as a cloak of respectability to hide their real object in business, and finally:

It means that the medical profession in its fight against "patent medicines" of a harmful nature is deprived of a part of the assistance that should be forthcoming from pharmacists.

THE N. A. R. D. AND THE A. D. S.

For some months it has been persistently rumored that the National Association of Retail Druggists, more familiarly known as the N. A. R. D., has become in effect a creature of the A. D. S. While there have been denials of this, particularly in the pages of *N. A. R. D. Notes*, the official organ of the National Association of Retail Druggists, the secretary of this

1. Feb. 16, 1907.

association recently admitted that with two exceptions all of the officers of the N. A. R. D. are now A. D. S. men.

Even with this admission, however, it might be considered that these A. D. S. members were interested in the N. A. R. D. in their individual capacity were it not for the positive statement recently made by Secretary Goddard of the A. D. S., who, in the *Voice of the Retail Druggist* (the A. D. S. house organ) for October, 1909, says:

"*Notes*, the official organ of the N. A. R. D. seems to be ashamed of the action of the delegates of its organization at the last annual meeting in electing an A. D. S. man as president, and they try to make it appear that the newly elected president was chosen by the 'Old Guard,' of which he was a great favorite.

"This is a most surprising position for *Notes* to take for many reasons:

"First: Because it is not in accordance with the facts.

"Second: Because it should be proud that its organization is at last officered by a man who is (through his prominent connection with the A. D. S.) a recognized representative of the retailers. . . .

"If *Notes* is still in doubt as to the attitude of its subscribers toward the A. D. S., we would suggest that the editor of that publication submit the matter to its members, for we feel sure that if it were left to a vote of its subscribers, a large majority would not be unfriendly, for the reason that organization druggists generally are almost a unit behind the A. D. S. . . .

"I cannot go into further details, but if I were in the retail business, I would get busy pushing A. D. S. preparations. You cannot lose, and it offers unlimited possibilities."

And this, it should be remembered, comes, not from a pharmacist, but from an erstwhile country newspaper publisher and promoter, who does not hesitate to tell the druggists of the country how to conduct their business—and not a few of them seem to be willing to accept his advice.

Incidentally, it may be added that the president of the N. A. R. D. was—last month—unanimously reelected president of the A. D. S.

From what has been said, then, it appears that the "Great American Fraud" has secured the unequivocal endorsement of a majority of the members of an association that might have been a powerful influence for good, in safeguarding the public welfare.

Altogether, it is deeply to be regretted that at least a very large number of pharmacists are as yet quite unwilling to dissociate themselves from the "trickery, treachery, humbug, fraud and lies" with which the nostrum business is so inextricably involved, and it is devoutly to be hoped that the very near future will bring with it a means for differentiating between the nostrum advocate and the pharmacist who is content to do a legitimate business.

In closing, let it be said that against the cooperative plan in itself there can be no objection. No one, except the druggists themselves, realizes more keenly than do physicians, the disgraceful way in which the "patent medicine" and proprietary interests have exploited for their own gain the retail druggist. And it must regretfully be admitted that the medical profession itself has been in no small degree responsible for this state of affairs—at least with regard to proprietaries. That druggists should revolt against the tyranny of these conditions is not only natural but encouraging; organization has no better field. If by cooperation the pharmacists of the country can produce legitimate products, well and good; the public will be the gainer. But that they should combine for the purpose of engaging in such a nefarious trade as that of the "patent medicine" business, not only fails to redound to the credit of pharmacy but at once damns the cooperative company thus engaged.

TANSAN MINERAL WATER
"One Use for a Senatorial Frank"

"Physicians are being solicited by mail to buy stock in The Tansan Mineral Water Company, 'an investment opportunity of unique possibilities,' shares one dollar each. The promoter is G. C. C. Howard, 'Eastern Manager and Selling Agent,' 1626 Spruce Street, Philadelphia. Mr. Howard avoids a large part of the expenses common to promoters of his kind, by distributing some of his literature postage free under the frank of the Hon. Boies Penrose. Senator Penrose's home is pretty close to 1626 Spruce Street; nevertheless we are sure his faults, which are many and big, do not include this sort of petty advantage of his Senatorial privilege."—Mark Sullivan, in *Collier's Weekly*.

Correspondence

Institutional Care for the Epileptic

To the Editor:—In a recent number of THE JOURNAL there appeared a query as to the institutions devoted to the care of epileptics in this country. The following is a list of the state institutions which are devoted exclusively to the care of epileptics:

Ohio.—Ohio Hospital for Epileptics, Gallipolis, Ohio. Dr. W. H. Pritchard, Superintendent. Founded 1892. Present census, 1,499. This institution cares for both the sane and insane epileptic, and it is contemplated to increase its capacity by 200 and remove all the insane epileptics thither from the state hospitals. The buildings are rather large detached buildings.

New York.—Craig Colony for Epileptics, Sonyea, N. Y. Dr. W. T. Shanahan, Superintendent. Founded 1894. Present census, 1,320. Intended only for sane epileptics of high grade, but there are also a considerable number of low-grade cases. The buildings are small cottages for the better classes and larger buildings for the low-grade. A new combined institution has recently been established in the eastern part of the state which may eventually relieve the Craig Colony of some of its lower-grade cases.

Massachusetts.—Massachusetts Hospital for Epileptics, Palmer, Mass. Dr. Everett Flood, Superintendent. Present capacity, 900. Only sane epileptics are received. Buildings for children are recently available. Buildings are small cottages.

New Jersey.—New Jersey State Village for Epileptics, Skillman, N. J. Dr. D. F. Weeks, Superintendent. Census, 305. Small cottages. The school facilities are excellent.

Kansas.—Hospital for Epileptics, Parsons, Kan. Dr. M. L. Perry, Superintendent. Census, 462. Takes both sane and insane epileptics. Both small and larger buildings are used, according to the mental grade of the patient.

Texas.—Epileptic Colony, Abilene, Texas. Dr. T. B. Bass, Superintendent. Census, 375. All classes of epileptics except the low-grade mentally are received.

Indiana.—Indiana Village for Epileptics, New Castle, Ind. Dr. W. C. Van Nuys, Superintendent. Sane epileptics only are received. The buildings are small cottages. Census, 116.

North Carolina.—Epileptics are cared for in connection with one of the state hospitals. The epileptic department is subordinate to the superintendent of the hospital.

Virginia.—A site has been purchased for a colony.

Connecticut.—The last legislature appropriated $25,000 for the purchase of a site and the erection of buildings. The work is in the hands of a commission.

Illinois.—Illinois has had for some time an act providing for a colony but no money was obtained to purchase a site or build cottages. There has been great activity in Illinois of late in the direction of a colony.

There are many state institutions in which epileptics are received along with other defectives, either the feeble-minded or the insane. There are also some semiprivate enterprises caring for epileptics:

The Passavant Memorial Homes for the Care of Epileptics, Rochester, Pa. Census, 57.

The Emmaus Asylums, St. Charles and Marthasville, Mo., are patterned after the great colony at Bielefeld, Germany, and hence care for many classes of unfortunates. Epileptics make up the largest number of their charges.

The Pennsylvania Epileptic Hospital and Colony Farm, Oakbourne, Pa., under the presidency of Dr. Wharton Sinkler, is a semiprivate charity. Census, 86.

The Silver Cross Home, Port Deposit, Md., also cares for many epileptics.

There has recently been organized in Philadelphia an association having as its object the obtaining of employment for epileptics. Dr. Matthew Woods, of Philadelphia, is one of the leaders.

The National Association for the Study of Epilepsy and the Care and Treatment of Epileptics, under the presidency of Dr. W. F. Drewry, of Petersburg, Va., attempts to bring into closer touch those who have as a common interest the study of the epileptic and his needs; it serves as a source of information on the subject and endeavors to stimulate interest in its field in states where there is no care at present for the epileptic.

The colony or village seems to be the form of institution most generally favored. The epileptic is unfitted by his disease for life in the outside world, and in the properly designed

state institution he finds not only care, but the stimulus and opportunity to make the most of what abilities he has.

The segregation of epileptics in institutions has an additional value, aside from the good accruing to them and their friends by their removal from home surroundings—namely the prevention of the increase of the disease through procreation by the epileptic. The more advanced standpoint, advising compulsory procedures looking toward the prevention of procreation by defectives of any sort, meets the earnest support of any one conversant with the family histories of epileptics.

J. F. MUNSON, Sonyea, N. Y.

Improved Method of Applying the Plaster Jacket

To the Editor:—In THE JOURNAL, December 25 (page 2158), is an article by Dr. K. D. Panton of Vancouver, advocating an improved method of applying the plaster jacket. I am not in any sense decrying the advantages of the method, though I have considered it rather an emergency method than one of choice. My purpose in writing is to call attention to the fact that in the second edition of Bradford and Lovett's "Orthopedic Surgery," brought out ten years ago, there is on page 50 a drawing by myself, illustrating precisely the same method, which had then been in use in this community for some years. I do not know who originated it, but suspect that the method has been used by various men, who have worked out the mechanical problem for themselves, just as Dr. Panton has done. There is, I think, no question of originality involved, but purely one of priority.

FREDERICK J. COTTON, Boston.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

INSTRUCTION IN HYGIENE IN PUBLIC SCHOOLS

To the Editor:—Please refer me to matter relative to the teaching of physiology and hygiene in the public schools.

JUANITA J. LEA, M.D., Detroit.

ANSWER.—To mention only a few, the following articles may be of use to you:

Putnam, Helen C.: Laws Concerning Teaching Hygiene, THE JOURNAL A. M. A., Dec. 23, 1905, p. 1945.

Editorial: Public Instruction in Sexual Hygiene, THE JOURNAL A. M. A., March 10, 1906, p. 729.

Department of Foreign News: Teaching of Hygiene and Temperance in British Elementary Schools, THE JOURNAL A. M. A., Dec. 15, 1906, p. 2021.

Kenwood, R. H.: Hygiene as a School Subject for Elementary Schools, *Lancet*, London, Oct. 12, 1907.

Jackson, E.: Teaching regarding Sex in the Public Schools, *Denver Med. Times*, May, 1908.

EFFECT OF REMOVAL OF FAUCIAL TONSILS ON VOICE AND REPRODUCTIVE POWERS

To the Editor:—What effect would the removal of the faucial tonsils from a child have on the voice and the procreative powers?

F. J. FRESHLEY, M.D., Plainville, Ind.

ANSWER.—The opinion of laryngologists and of recent authors, so far as they treat of the matter at all, may be summed up in the following, quoted from Ingals' "Diseases of the Chest, Throat and Nasal Cavities": "It will improve the voice if it alters it in any way. There is no reason for believing that the tonsils have any influence whatever on the generative organs, though the statement of Chassaignac indicates his belief that hypertrophy of the tonsil tends to arrest the growth of these parts, and that removal of the tonsils favors their development."

HISTORICAL ACCOUNT OF BACTERIOLOGY

To the Editor:—Please give me references to some historical facts on bacteriology.

C. B. FULKERSON, Kalamazoo, Mich.

ANSWER.—Almost any standard book on bacteriology will give the historical facts desired. A brief historical account of the subject may be found in W. H. Parks' "Bacteriologic Organisms" (1905), or in A. C. Abbott's "Principles of Bacteriology" (1909), both published by Lea and Febiger, 925 Sansom St., Philadelphia.

The Public Service

Medical Department of the Army

Changes for the week ended Jan. 1, 1910:

Smith, Herbert M., granted 3 months' leave of absence.

Talbot, E. M., capt., left Fort 9. A. Russell, Wyo., on 30 days' leave of absence.

Weed, F. W., capt., left Fort Totten, N. Y., on 10 days' leave.

Goldthwaite, R. H., lieut., left Fort Niagara, N. Y., on 10 days' leave of absence.

Field, Peter C., left Fort Slocum, N. Y., on detached duty en route to Detroit.

Bloombergh, H. D., capt., detailed as a member of the board of medical officers appointed in Par. 21, S. O. 16, Jan. 16, 1906, War Dept., for the purpose of studying tropical diseases as they exist in the Philippine Islands, vice Capt. James M. Phalen, Medical Corps, relieved.

Boyer, Perry L.; Woodhall, Wm. P.; Macy, Frederick S., capts., and McCord, Donald P.; Delacroix, A. C.; Bierbower, H. C., 1st lieuts., M. R. C., relieved from duty in the Philippines Division, and to sail on transport leaving Manila, P. I., about April 15, 1910, and on arrival in San Francisco, to report by telegraph to the Adjutant General of the Army, for further orders.

Schmitter, Ferdinand, capt., ordered to Fort Slocum, N. Y., instead of Fort Logan, Colo., for duty at expiration of his present leave of absence.

Gray, William W., col.; Clayton, Jere B., major; Collins, C. C.; Smart, Wm. M., and Connor, C. H., capts.; Warringer, B. B., and Thorne, James I., 1st lieuts., M. R. C., relieved from duty in the Philippines Division, and to sail on transport leaving Manila about May 15, 1910, and on arrival at San Francisco, to report by telegraph to The Adjutant General of the Army, for further orders.

Smith, Allen M., major, granted 7 days' leave of absence.

The following named officers of the Medical Corps and Medical Reserve Corps are relieved from duty at the stations designated after their respective names, and will proceed to San Francisco, and take transport to sail from that place on or about March 5, 1910, for the Philippine Islands, and on arrival at Manila will report to commanding general, Philippines Division, for assignment to duty: Foster, Charles L., capt., Army General Hospital, Presidio of San Francisco, Cal.; Morris, Samuel J., capt., Fort Washington, Md.; Coburn, Henry C., Jr., 1st lieut., Fort Slocum, N. Y.; Snow, Corydon G., 1st lieut., Fort Leavenworth, Kan.; McDiarmid, Norman L., 1st lieut., Jefferson Barracks, Mo.; Kershner, Warren E., 1st lieut., M. R. C., Fort Hancock, N. J.; Griffin, John C., 1st lieut., M. R. C., Fort Howard, Md.; Heterick, Robert H., 1st lieut., M. R. C., Fort Oglethorpe, Ga.; Browne, Roderic W., 1st lieut., M. R. C., Fort Monroe, Va.

Purviance, Wm. E.; Chamberlain, W. P., and Truby, Albert E., majors, appointed members of board to meet at Manila, P. I., for the examination of such officers of the Medical Corps as may be ordered before it to determine their fitness for promotion.

Medical Corps of the Navy

Changes for the week ended Jan. 1, 1910:

Taylor, J. S., surgeon, detached from the *New York* and ordered to the *Mississippi*.

Robnett, A. H., P. A. surgeon, detached from the Naval Hospital, Boston, and ordered to the Naval Training Station, Narragansett Bay, R. I.

Public Health and Marine-Hospital Service

List of changes for the week ended Dec. 29, 1909:

Trask, J. W., asst. surgeon-general, granted 3½ days' leave of absence, from December 28, 1909.

Austin, H. W., surgeon, detailed as a member of a Revenue-Cutter Service Retiring Board, to meet at the Barge Office, New York, N. Y., December 27, 1909.

Carter, H. R., surgeon, granted 2 months' leave of absence from December 5, 1909, on account of sickness.

Fricks, L. D., passed asst. surgeon, leave of absence for 3 months from September 24, 1909, amended to read 2 months and 18 days.

Fox, Carroll, passed asst. surgeon, granted 6 days' leave of absence from December 6, 1909, under paragraph 191, Service Regulations.

McClintic, T. B., passed asst. surgeon, granted 5 days' leave of absence from December 27, 1909, under paragraph 191, Service Regulations.

Francis, Edward, passed asst. surgeon, leave of absence for 6 days from December 6, 1909, revoked.

Collins, G. L., passed asst. surgeon, detailed as a member of a Revenue-Cutter Service Retiring Board to meet at the Barge Office, New York, December 27, 1909.

Spratt, R. D., passed asst. surgeon, granted 7 days' leave of absence from December 30, 1909.

Wollenberg, R. A. C., asst. surgeon, leave of absence for 2 months from October 6, 1909, amended to read 20 days.

Warner, H. J., asst. surgeon, granted 7 days' leave of absence from December 23, 1909.

Wood, C. E., asst. surgeon, granted 3 days' leave of absence from December 21, 1909, on account of sickness.

Leake, James P., asst. surgeon, relieved from duty at Chicago and directed to proceed to Ellis Island, N. Y., and report to the Chief Medical Officer for duty.

Kolb, L., asst. surgeon, granted 3 days' leave of absence from December 24, 1909, under paragraph 191, Service Regulations.

Branham, H. M., acting asst. surgeon, leave of absence for 3 days from December 15, 1909, without pay, revoked.

Fox, M. C., acting asst. surgeon, granted 15 days' leave of absence from January 3, 1910.

Gill, S. G., acting asst. surgeon, granted 3 days' leave of absence from December 24, 1909, under paragraph 210, Service Regulations.

Walsh, W. H., acting asst. surgeon, granted 4 days' leave of absence from December 23, 1909, under paragraph 210, Service Regulations.

Watkins, McD., acting asst. surgeon, granted 2 days' leave of absence from December 25, 1909.

BOARD CONVENED

Board of medical officers convened to meet at the Marine Hospital at Baltimore, December 22, 1909, for the purpose of re-examining an alien. Detail for the board: Surgeon W. P. McIntosh, chairman; Passed Asst. Surgeon M. K. Gwyn; Passed Asst. Surgeon J. W. Schereschewsky, recorder.

Health Reports

The following have been reported to the Public Health Service, during the week ended Dec. 31, 1909:

SMALLPOX—UNITED STATES

Alabama: Mobile, Dec. 4-11, 1 case; Montgomery, 10 cases.
Florida: Jacksonville, Dec. 4-11, 1 case.
Indiana: Muncie, Dec. 4-11, 2 cases; South Bend, 1 case.
Kentucky: Lexington, Dec. 7-14, 2 cases.
Tennessee: Knoxville, Dec. 11-18, 1 case; Nashville, Nov. 13-20, 2 cases.
Wisconsin: La Crosse, Dec. 4-11, 5 cases; Milwaukee, 1 case; Superior, 2 cases.

SMALLPOX—INSULAR

Philippine Islands: Manila, Oct. 30-Nov. 6, 1 case.

SMALLPOX—FOREIGN

Canada: Halifax, Dec. 4-11, 1 case.
France: Paris, Nov. 27-Dec. 4, 4 cases.
Great Britain: London, Nov. 20-27, 4 cases.
Italy: Naples, Nov. 27-Dec. 5, 6 cases, 2 deaths.
Mexico: Aguascalientes, Dec. 4-11, 2 deaths; Mexico City, Nov. 6-13, 1 death; Monterey, Dec. 5-12, 1 death.
Newfoundland: St. Johns, Dec. 4-11, 3 cases.
Portugal: Lisbon, Nov. 27-Dec. 4, 3 cases.
Russia: Libau, Nov. 21-Dec. 5, 4 cases, 1 death; Moscow, Nov. 13-20, 4 cases, 2 deaths; Riga, Nov. 20-Dec. 4, 22 cases; Warsaw, Sept. 25-Oct. 23, 39 deaths.
Spain: Barcelona, Nov. 20-Dec. 6, 2 deaths; Madrid, Nov. 1-30, 96 deaths; Seville, 1 death.
Turkey: Constantinople, Nov. 21-28, 1 death; Smyrna, Oct. 15-Nov. 4, 59 deaths; Valencia, Nov. 15-Dec. 4, 2 cases.

YELLOW FEVER

Ecuador: Guayaquil, Nov. 13-27, 12 deaths.
Venezuela: Caracas, Nov. 22-25, 2 cases.
Philippine Islands: Manila, Oct. 30-Nov. 6, 11 cases, 10 deaths; Provinces, 160 cases, 121 deaths.

CHOLERA

India: Rangoon, Nov. 6-13, 10 deaths.
Java: Batavia, Nov. 6-13, 218 cases, 26 deaths.
Russia, general, Nov. 14-20, 85 cases, 39 deaths; St. Petersburg, 31 cases, 5 deaths.
Sumatra: Palembang, Nov. 6, present.

PLAGUE

Ecuador: Guayaquil, Nov. 13-27, 39 deaths.
India, general, Nov. 6-13, 5,002 cases, 3,901 deaths; Rangoon, 1 death.
Japan: Kobe, to Nov. 30, 244 cases.

Association News

NEW MEMBERS

List of new members of the American Medical Association for the month of December, 1909.

ALABAMA

Hogan, E. P., Birmingham.
Pearson, C. F., Montgomery.
Scott, E. M., Avondale.
Sellers, H. G., Birmingham.
Westmoreland, H. D., Huntsville.

CALIFORNIA

Barry, Ernest, San Francisco.
Bricca, C. R., San Francisco.
Christian, J. T., Lodi.
Fleischner, E. C., San Francisco.
Holland, J. H., Riverside.
Ledyard, C. C., Pasadena.
Hunter, Leo, San Francisco.
Magnus, M. E., San Francisco.
Putnam, V. E., San Francisco.
Shields, J. W., San Francisco.
Sweet, Earl, Los Angeles.
Thorne, I. W., San Francisco.
Tiffany, E. N., Conlinga.
Wright, A. H., San Francisco.

COLORADO

Doane, Bert L., Del Norte.

CONNECTICUT

Bartlett, W. B., Hartford.
Godfrey, W. T., Stamford.

FLORIDA

Pillans, P. P., Orlando.

GEORGIA

Lyle, W. C., Augusta.
McArthur, T. J., Cordele.

ILLINOIS

Chapman, F. P., Oak Park.
Conroy, C. L., Chicago.
Davenport, G. L., Chicago.
Deane, F. H., Hindsboro.
Edmonson, O. B., Clinton.
Gordon, J. M., Chicago.
Hayward, Martha, Aurora.
Inwall, C. W., Chicago.
Kaillontzis, C. P., Chicago.
Kraus, H. A., Chicago.
McGann, M. E., Joliet.
Mellinger, H. V., Chicago.
Meyer, Rudolph, Chicago.
Meyerovitz, Max, Chicago.
Mosser, Robert, Chicago.
Potter, W. E., Oak Park.
Riggs, J. P., Media.
Rogers, H. H., Canton.
Rosenblatt, Sol, Chicago.
Rosenzweig, Louis, Chicago.
Stephen, H. E., Joliet.
Webster, G. O., Murrayville.

INDIANA

Inks, C. A., Nappanee.
Jennings, W. L., Bridgeport.

IOWA

Hovenden, J. H., Laurens.
Parrish, W. O., Osceola.
Reppert, Lyell, Muscatine.
Reinecke, E. L., Dubuque.
Ward, E. C., Mt. Auburn.

KANSAS

Coe, W. B., Tonganoxie.
Dobson, S. J., Eqna.
Lloyd, C. D., Leavenworth.
Rea, J. G., Wellington.
Wood, A. J., Fulton.

KENTUCKY

Higbee, B. D., Clinton.
Jett, N. A., Brooksville.
Lawson, N. E., Red Ash.
McClellan, Mary C., Lexington.
Nickell, G. C., Morehead.

MARYLAND

Browne, J. N., Baltimore.
Hodgson, H. M., Lonaconing.
Hutchins, E. H., Baltimore.
Lassman, G. A., Baltimore.

MASSACHUSETTS

Denning, F. J., S. Boston.

MICHIGAN

Campbell, W. A., Muskegon.
Cramer, J. T., Muskegon.
Goodnow, L. L., Michigamme.
Jackson, J. B., Kalamazoo.
King, W. T., Allouez.
McEwan, J. W., Detroit.
Roberson, G. G., Utica.
Wickware, M. M., Cass City.
Wilson, P. S., Negaunee.

MINNESOTA

Arneson, Thomas, Balaton.
Kean, N. D., Coleraine.
Magnuson, G. A., Aitken.
Morris, Minor, Hopkins.
Tilton, A. J., Harris.

MISSOURI

Fischer, J. G. W., Alma.
Harris, C. G., Festus.
Rehfeldt, C. S., St. Louis.
Russler, J. J., St. Louis.
Schoele, M. H., St. Louis.
Schoor, Edward, Garden City.
Scott, J. N., Kansas City.
Summers, J. S., Jefferson City.
Wenger, O. C., St. Louis.

NEBRASKA

Morse, R. H., Wisner.
Swartzlander, L. C., Omaha.

NEVADA

Schwartz, C. E., Luckyboy.

NEW MEXICO

McCormick, W. W., San Pedro.

NEW JERSEY

Hasking, A. P., Jersey City.
Jaffin, A. E., Jersey City.
Miner, Donald, Jersey City.

NEW YORK

Blanchard, R. B., Jamestown.
Gilmore, A. W., Auburn.
Gould, D. N., Sherburne.
Haberman, J. V., New York City.
Hays, H. M., New York City.
Hirsh, C. E., Brooklyn.
Lobenstine, R. W., New York City.
Schoenberg, M. J., New York City.
Van Winkle, L. P., Amityville.
Richardson, C. H., New York City.

NORTH CAROLINA

Kirby, G. S., Marion.
Linville, W. C., Winston-Salem.

NORTH DAKOTA

Husser, A. A., Berthold.

OHIO

Coleman, J. A., Toledo
Heyl, A. B., Cincinnati.
Jones, A. L., Lima.
Manley, O. T., Cleveland.
Miller, T. C., Massillon.
Murphy, E. D., Antwerp.
Steer, C. L., Lima.
Syler, A. H., Sugar Creek.
Watkins, F. L., Columbus.

OKLAHOMA

Hughes, J. E., Shawnee.

OREGON

Macrum, C. A., Portland.

PENNSYLVANIA

Boyer, G. H., Pottsville.
Campbell, W. B., Jackson.
Chalfant, H. B., Huntingdon.
Dengler, R. H., Philadelphia.
Hinchcliffe, J. H., Philadelphia.
Kunkel, O. F., Kline sville.
Lubken, W. O., Johnstown.
Mitchell, L. T., Aspinwall.
Molyneux, S. D., Nanticoke.
Muller, W. K., Philadelphia.
Myers, N. R., Wanamie.
Putts, B. S., Mont Alto.

SOUTH CAROLINA

Bell, F. A., Sampit.
Bowen, W. C., Belton.
Coggeshall, J. T., Darlington.
Davis, J. W., Clinton.
Haynie, W. R., Belton.
Hughey, J. B., Greenwood.
Johnson, F. B., Charleston.
Pepper, W. H., Anderson.
Smith, D. H., Florence.
White, W. G., Yorkville.

SOUTH DAKOTA

Church, E. O., Revillo.

TENNESSEE

Baird, W. O., Henderson.
Swanay, O. M., Treadway.

UTAH

Clark, F. G., Ogden.
Morrell, J. R., Ogden.
Smith, E. H., Ogden.

VIRGINIA

Ardan, N. I., Keokee.
Driver, W. F., New Market.

WASHINGTON

Campbell, F. M., LaCrosse.
Jacobson, L. H., Seattle.
Johanson, N. A., Seattle.
Rich, E. A., Tacoma.
Rosenkranz, O. H. G., Farmington.

WEST VIRGINIA

Leon, M., Mannington.

WISCONSIN

Chaney, Eugene, Wauwatosa.
Halsey, A. Milwaukee.
Johnston, G. B., Abbotsford.
McGovern, P. H., Milwaukee.
Malone, E. W., Waukesha.
McCarthy, T. H., Madison.
Newell, F. F., Burlington.
Parkhill, F. G., Delavan.
Rice, F. A., Delavan.
Rittenhouse, W., Lake Geneva.
Weld, W. H., Ft. Atkinson.

Society Proceedings

COMING MEETING

Medical Society of State of New York, Albany, January 25.

WESTERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

Nineteenth Annual Meeting, Held at Omaha, Neb., Dec. 20-21, 1909

The President, DR. ARTHUR L. WRIGHT, Carroll, Iowa, in the Chair

The officers elected were given in THE JOURNAL, Jan. 1, 1910, p. 60.

Gastrointestinal Surgery

DR. T. C. WITHERSPOON, Butte, Mont.: In this paper I call attention to an occurrence which I believe throws some light on the question of paralytic conditions observed in the stomach and bowels, and report the following case as an illustration. A man previously healthy, except for gastric symptoms, wiry and active, suffered from gastric ulcer of a chronic type. The ulcer was

not situated in the pylorus, but to the left, and there was no obstruction to outflow from the stomach, nor was there dilation. Eight days after the gastroenterostomy the stomach became acutely dilated until its lower curvature reached the pelvic cavity. A second operation, done because of the dilation, nine days after the first, proved the duodenum was normal; the bowels were flat, the gastrojejunal opening still patulous, and no point of obstruction could be discovered beyond the stomach. Neither was there evidence of inflammation of the stomach or intestinal wall or peritoneum. A gastrostomy was performed and the fluid in the stomach had to be removed by pumping it out, as the stomach was completely paralyzed. The original incision in the epigastric area was not healed after eight days. It opened without instrumentation immediately on snipping the stitches at the second operation. On the ninth day this man suffered considerable pain in the stomach area and behind to the left. Following the gastrostomy the pain ceased. The epigastric incision through which both operations were done was closed at the second operation by through-and-through silkworm gut stitches, and healed without the slightest inflammatory reaction. The conclusions to which I came after observing this case were: 1. The acute dilation was the direct result of a paralysis of the stomach wall. 2. The lack of healing in the epigastric incision following a careful closure at the time of the first operation, and not associated with an evidence of infection, must be attributed to a trophic disturbance. 3. The stomach and epigastric abdominal wall are both innervated by the same spinal segment. It is a matter of logical deduction that the central apparatus was responsible for disturbance in both stomach and wound. 4. Some toxic agent only could have become so rapidly operative after eight full days of a normal condition following the operation, and this agent must have produced its effects by acting on the ganglionic nerve cells in the spinal segment. 5. This toxic agent most probably took its origin from an abnormal fermentation within the bowel and altered protective action of the mucous membrane of the bowel or of the liver failed to render harmless some product absorbed from the bowel lumen. In the last two and a half years I have had forty-six patients with general peritonitis following perforation of the appendix and of stomach recover. In these cases a continuous proctoclysis was practiced in only two. The method of administering the water was that of intermittent injections into the rectum, averaging from 60 to 80 ounces in twenty-four hours. When the patients' condition allowed removal of the appendix or closure of the ulcer and the establishment of pelvic drainage, they recovered. During this period I have had five deaths when simple drain of the pelvis was all that was done due to the extreme condition of the patient. All agree as to the value of introducing water by rectum and keeping the stomach empty, but I think that too much stress has been laid on the value of continuous proctoclysis, using physiologic salt solution. The Fowler position, with pelvic drain, seems to be the life-saving factor in general peritonitis.

DISCUSSION

DR. LEONARD FREEMAN, Denver, Col.: Dr. Witherspoon has called attention to dilatation of the stomach which takes place without apparently mechanical cause, and he attributes to some of these cases the action of bacteria on the nervous system. That may be true, but I doubt the absence of mechanical cause in addition to the action of the bacteria on the nervous system. We know that there are certain individuals who have stomachs that are difficult to empty, and that difficulty in emptying the stomach is due perhaps to a sagging of the intestines, large and small, particularly the large intestine, in pulling down on the stomach and to a certain extent influencing the pylorus. Such cases occur once in a while and account for many difficulties in the emptying of the stomach. I think that if we were to trace these cases of dilatation of the stomach we would probably find in the stomach of those people who have had such dilatations some difficulty in the emptying of the stomach originally. Some time ago I operated in a very simple pelvic case, which was followed by dilatation of the stomach clear down to the pelvis, resulting in the death of the patient. The autopsy showed that there was no absolute obstruction to the pylorus. There was no obstruction of the intestines themselves, and yet a fresh adhesion took place at the site of the pelvic operation to the omentum, which pulled on the large intestine, and that in turn pulled on the gastrocolic omentum to such an extent as to shut off the pylorus. This was demonstrated at the autopsy and accounted for the fact that the stomach had dilated to a certain extent. I think a combination of these things, namely, a stomach which does not empty itself very readily, combined with a toxemia and possibly with some pelvic affection, will serve to explain these cases better than to adopt the theory that the trouble is entirely nervous.

DR. CLIFFORD U. COLLINS, Peoria, Ill.: I am interested in the reference which was made to the separation of the abdominal incision. Madelung some years ago reported a number of cases in which separation of the abdominal incision had occurred and came to the conclusion that the kind of suture material used for closure of the wound had nothing to do with the separation. Dr. Emil Ries a few months ago reported three cases in which separation of the incision had occurred. The separation began at the peritoneal layer, and there was a gradual separation until the skin was reached, the skin being the last process in the separation. In the first case Dr. Witherspoon mentioned, did the peritoneal and muscular layers show any granulating process to indicate that separation had occurred some days before? The second case was rather unique in the fact that separation occurred first in the skin and then the muscle layer. In most of the cases reported the separation occurred in the peritoneal and muscular layers.

DR. CHARLES H. MAYO, Rochester, Minn.: I understood Dr. Witherspoon to recommend gastrostomy for the treatment of acute dilatation of the stomach. In the cases reported the stomach was greatly distended and flaccid and so paralyzed that it would not empty through the incision made into it, and the contents had to be pumped out. A great many more cases of dilatation of the stomach occur than is generally believed, and I would recommend the more frequent use of the stomach tube. In most cases the stomach tube is applied in the postoperative treatment of surgical cases when vomiting occurs or sick stomach exists. When these patients are not doing well it will be found many times that there is so much paralysis that there is no effort on the part of the stomach to empty itself, and yet it will be found to contain half a pail full of fluid, the pressure of which on the abdominal wall has a great deal to do in producing anemia of the area of the blood supply which promotes healing, so that if we have an internal pressure beneath the suture line, limiting the capacity of the abdomen, we will have slow healing, and when we want to reoperate, if we cut the sutures, the wound readily opens, and it quickly heals after distention is relieved. Often the distention can be relieved by resorting to the stomach tube without a secondary operation, and I think a little more stress should be laid on that point.

DR. I. B. PERKINS, Denver, Colo.: It is usual to have considerable nausea following anesthesia, and for several years I have made it a practice to put the patient in the high Fowler position, and I find that in that position patients have much less nausea, and can take water freely, and that it passes readily into the intestines. I also find that there is much less dilatation of the stomach in these cases than I formerly had. I had occasion to experiment a little on myself in this line. I took an anesthetic to determine whether or not it was the psychic effect or whether it was due to my theory of drainage. At any rate, I had no nausea after I was put in the Fowler position.

DR. CHARLES H. WALLACE, St. Joseph, Mo.: I think we all agree that the failure of union of abdominal incisions, or incisions anywhere, is due to sepsis, no matter whether the sepsis be preoperative or postoperative. Another condition which I have encountered two or three times in the failure of union of the abdominal wall, and which I think is a factor in these cases, is the condition of the blood of the patient before operation. I recall two cases in which there was pronounced anemia, although operation was imperative, and there was failure of union of the incision, evidently due to the general anemias that existed. Of course, we witness this failure of union in other constitutional dyscrasias, such as chronic nephritis, and when we are compelled to operate on such patients

the wounds may fail to unite on account of the constitutional condition present.

Abdominal Contusions with Special Reference to Indications for Early Operation

DR. L. W. LITTIG, Iowa City, reported four cases of contusion of the abdomen with a view to giving the indications for early operation. After discussing the symptoms and diagnosis he said that if there be a contusion of the abdomen and if the muscles are rigid, one should operate. Patients may be seemingly well for a number of hours or even days, and injury to the mesentery may result in gangrene of the intestine and death. Given a case of abdominal contusion, followed by board-like rigidity of the abdominal muscles, which does not quickly disappear, a laparotomy should be performed immediately. This symptom may be absent during shock in the absence of pain, but its absence under these conditions must not be regarded as a favorable symptom. There may be some cases in which necessity for immediate operation is not clear. In such cases he would not give opium. There will be other cases which do not seem severe, and in which an operation does not seem to be indicated. In these cases also he would not give opium.

DISCUSSION

DR. CHARLES W. OVIATT, Oshkosh, Wis.: A case recently came under my observation of a man who was struck in the right iliac region with a board from a circular saw. In this case rigidity was marked from the start, but other symptoms did not develop for forty-eight hours. The patient refused operation, and died. Autopsy revealed that the cecum was torn loose from its attachment, with a hole in the bowel. No symptoms which would seem to call for immediate operation presented themselves for at least thirty-six hours, and yet this case emphasizes the importance of operating early when rigidity is marked.

Foreign Body in the Intestine

DR. CHARLES W. OVIATT, Oshkosh, Wis., reported the following interesting and unique case:

A Swede, male, aged 53, was admitted to St. Mary's Hospital, Feb. 22, 1908. It was impossible to obtain anything like a clear history of the patient's previous condition, and no account was given of the swallowing of the foreign body. He complained of pain low down in the right side and on physical examination a circumscribed area of resistance could easily be made out with pain on pressure at this point. The pulse and temperature were normal. The diagnosis of appendicitis was perhaps too quickly made, but inability to get a clear history of the case is the excuse. On opening the abdomen through the outer border of the right rectus, a pointed foreign substance could be felt in the cecum. Through a very short incision into this viscus, a lead pencil, seven and a half inches in length, was removed. The appendix was small, presented no evidence of disease and was not removed. On the day following the operation the patient was shown the pencil and asked if he could account for its presence inside of him. He then remembered that about ten weeks before, while engaged in a game of cards in a saloon, acting in the capacity of score-keeper, he had the pencil in his mouth and during a fit of laughter swallowed it. He stated that for a day or two following the accident he had some pain in his stomach, but after that had experienced no trouble and had forgotten the incident entirely.

Secondary (Posterior) Gastrojejunostomy for Gastric Ulcer

DR. J. F. PERCY, Galesburg, Ill., reported a case in which, following an anterior gastroenterostomy performed eight years previously, he removed the jejunum from the stomach wall and closed up the openings, including the ulcer, and then did a posterior gastrojejunostomy with the short loop. He does not believe that hyperacidity accounts for all phases of the causes of these ulcers, but gives the chief rôle to chronic cholecystitis. His paper will appear in full in THE JOURNAL later.

DISCUSSION

DR. L. L. MCARTHUR, Chicago: I am inclined to agree with Dr. Percy as to the influence which an abnormal flow of bile may have in the maintenance of ulcerative conditions in the stomach, and the maintenance of hyperacidity. The bile is naturally the antidote of the acid secretions, and irritation about the gall-bladder will not infrequently influence the condition of the stomach secretions. The theory advanced by Dr. Percy might be further elucidated by laboratory experiments, and I would like to suggest that he have them carried out.

DR. CHARLES H. MAYO, Rochester, Minn.: This paper brings to my mind that, ten years ago, when there were comparatively few gastroenterostomies done, we heard more about ulcers of the jejunum in proportion than we do to-day. Out of a good many gastroenterostomies we find that condition very rare in our own experience. Our experience, however, corresponds to what Dr. Percy has reported, namely, after anterior gastroenterostomy the ulcer has been at the site of the gastroenterostomy instead of being lower down in the bowel.

DR. PERCY: I have just completed some laboratory work by which I shall try to prove some of the things that are merely visionary now.

(*To be continued*)

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION

Twenty-second Annual Session, held at Hot Springs, Va., Dec. 14-16, 1909

(*Continued from page 72*)

Treatment of Advanced Extrauterine Pregnancy

DR. REUBEN PETERSON, Ann Arbor, Mich., drew the following conclusions:

1. Wherever conditions permit, operation for the removal of the gestation sac is indicated in the first half of an extrauterine pregnancy, since at this period the mother is in great danger from rupture and sepsis, and the chances for the survival of the fetus are very poor. 2. During the latter part of an extrauterine gestation the chances of rupture and a fatal hemorrhage are much less (4.8 per cent.) and the chances of the survival of the fetus are much greater. 3. While malnutrition and malformation of the extrauterine child are more common than with the fetus under normal conditions, they are not frequent enough to contraindicate attempts at saving its life; hence, under favorable surroundings, when the patient can be watched, she should be allowed to go within two or three weeks of term before operation. 4. Since the maternal mortality is more than twice as great after operations in advanced extrauterine pregnancy when the placenta is left behind, its removal should be one of the cardinal principles of each operation. 5. In the discoid variety of placenta, in which only a small surface of this organ is not attached, the blood supply must be controlled either by tying the vessels, or by compression of the aorta before an attempt be made to remove the placenta. 6. When, for any reason, removal of the placenta is impossible, the sac should be stitched and the placenta shut off from the peritoneal cavity by gauze. 7. Dependent drainage through the vagina should be secured whenever possible.

Advantages of Neglect in Appendicitis Operations

DR. ROBERT T. MORRIS, New York City: We have conscientiously tried to do too much in appendicitis operations and have damaged our patients unnecessarily. According to the principles of the pathologic era in surgery, we felt bound to remove all the products of infection in a most thorough way. We made elaborate arrangements for drainage, and we took the greatest care to avoid infection of the normal peritoneum. All these things which we did with so much care and caution were commendable until we learned step by step over to the principles of the fourth or physiologic era in surgery, allowing the patient to do most of the work of managing infections himself. The function of the surgeon to-day is merely to turn the tide of battle, and to place the patient in such condition that he can call out his own resources and fight the battle better than the surgeon could do it for him.

The application of most of our resources damaged the patient in such a way that he was prevented from calling out his own good resources. If we neglect to protect the peritoneum by putting in a mass of gauze while at work, it gives the patient an advantage, because the fear of pus infecting the normal peritoneum is now known to be a fanciful fear. If we neglect to make very long incisions or multiple incisions, it gives the patient an advantage, because he avoids the shock incident to large incisions, and he loses the menace of subsequent hernia. If we neglect to wash or wipe the field of operation thoroughly the patient has the advantage of avoiding the shock, and of the prolonged period of anesthesia required for such detailed work. If we neglect to cleanse and beautify the surroundings of a postoperative fistula, the patient has the advantage of rapid closure of such a fistula through the rapid contraction of connective tissue which is not meddled with.

DISCUSSION

DR. JOSEPH PRICE, Philadelphia: I want to condemn unqualifiedly stump operations of every character, because we are too far advanced to leave one-sixth or one-eighth of the appendix when operating for appendicitis. A clean removal of the appendix is a simple procedure.

DR. W. P. CARR, Washington, D. C.: Dr. Morris is right in one respect, namely, that in the bad cases of appendicitis we must fit the operation to the condition of the patient. I have seen many patients recover after a simple opening has been made, and pus let out, nothing further being done except perhaps to put a catgut ligature around the appendix and remove it, if possible to do so at the time. Such patients would not have stood a prolonged operation.

DR. J. M. T. FINNEY, Baltimore: I wish to take exception to the word "neglect" in the title of Dr. Morris' paper, and venture to suggest in its place the word "observance," meaning by that, observance of certain fundamental principles of surgery. If there is anything that has been accepted as settled to-day, it is that unnecessary handling of the tissues, or unnecessary trauma inflicted on the intestinal organs, especially, is a surgical sin; also the unnecessary application of certain irritating antiseptic solutions to the peritoneal surface is also a surgical sin. In reference to the management of the stump of the appendix, I want to be considered as one of those who ligate the stump; I have always done so, and from an experience of a thousand or more cases of appendicitis, in which this has been done, I do not recall a single instance in which the slightest degree of trouble could be referred to the stump. It seems to me that we are blaming a system for the faulty application of it.

Unusual Type of Bladder Tumor

DR. ROBERT C. BRYAN, Richmond, Va.: I here report briefly a cavernous angioma of the bladder. By suprapubic cystostomy the tumor was located with difficulty, owing to the collapsed condition of the bladder. With serrated scissors it was carefully dissected out of the mucosa, the base was thoroughly seared with the Paquelin cautery, the free edges of the mucous membrane were stitched together with catgut, the bladder sewed to the abdominal wall, and drainage established. There was little hemorrhage. The patient reacted well, and made a good recovery.

Surgery of the Knee-Joint

DR. J. GARLAND SHERRILL, Louisville: Of the major traumatisms, fracture of the patella is of chief importance. This may be a very simple injury, if, for instance, the fracture is incomplete and the fragments are not separated. On the other hand, a compound fracture of this bone becomes a most serious accident. The result, after the so-called expectant treatment of fracture of this bone, may be sufficiently good to insure fair functional use of the limb. The results of the open operative treatment, however, are so much better that in healthy young patients and under proper surroundings the open method is strongly to be advised. My plan of treatment in fracture of the patella consists in a semilunar incision across the front of the joint at or just below the site of the fracture. Any clots of blood present are removed and all bleeding vessels controlled. The lacerated tendon of the quadriceps muscle is then sutured on each side and over the patella with a chromic catgut. The fascia and skin are then closed with catgut without drainage. After the wound is dressed the limb is placed in plaster of Paris. Passive motion is advisable in the third week and the patient can walk before the end of the fourth week. The fractures of the femur and tibia are always the accompaniment of very severe violence and ought to be treated according to the general principles for use in such injuries. Dislocation of the semilunar cartilage proves very troublesome to the patient and frequently causes great pain as well as fixation of the joint. The internal cartilage is affected more frequently than the external and the dislocation may be partial as a folding of the cartilage on itself, or the entire cartilage may be separated. The causative factor is in most cases a sudden torsion of the tibia, although a blow driving the tibia backward in moderate flexion might produce it. The diagnosis is to be made by the sudden fixation of a previously healthy joint accompanied by a sharp pain with subsequent restoration of function, and later a recurrence of the symptoms. Effusion into the joint may follow the injury and in some cases the cartilage may be felt in front of the joint near the margin of the tibia. Pressure over its former attachment will elicit pain and soreness. The latter is a valuable point in the diagnosis of this condition from loose (extraneous) bodies in the joints. Treatment is either palliative or operative.

DISCUSSION

DR. A. R. SHANDS, Washington, D. C.: I have no more hesitation in opening the knee-joint than I would in opening the abdomen, and I have been doing it right along in cases of obstinate synovitis. In many cases of recurrent synovitis the joint has never been emptied of synovial fluid. The accumulative synovial fluid forms a mass similar to that in the bottom of an old vinegar barrel, and that is what causes recurrence of the trouble.

DR. W. O. ROBERTS, Louisville: I have long since given up the use of metal appliances for holding fragments together. I resort to the open method in the treatment in cases in which we have the advantages of a suitable infirmary. I have seen but two cases of dislocation of the patella.

DR. HORACE J. WHITACRE, Cincinnati: I wish to report two cases of loose semilunar cartilage, one in a boy, 10 years of age, in which the cartilage was organized and was removed; the other in a patient in whom the cartilage seemed to be in fairly good shape, and was sutured in place. The boy has remained in good condition except that he has had some pain from time to time when he exerted himself, but he has had no further displacement.

DR. JOHN C. WYSOR, Clifton Forge, Va.: I recall one case in which I found fifteen floating bodies in the knee-joint ranging in size from the size of the end of my little finger to more than an inch in diameter. Operation was followed by a good result.

Myositis Ossificans Traumatica

DR. J. M. T. FINNEY, Baltimore: The pathologic condition which forms the basis of this paper is one, the existence of which has been recognized for a long time, but only within a comparatively few years has it attracted any general attention. Including the seven cases reported in the paper, over 150 cases now have been so far recorded. There is always danger of mistaking this disease for sarcoma. Three of my patients came to me with a provisional diagnosis of sarcoma of the femur. There still exists a considerable difference of opinion as to the manner in which these bony deposits take place, and the source from which they come. A number of distinct conditions have been grouped under the general head of "myositis ossificans;" these all represent different pathologic processes.

The factor most concerned in the production of this trouble is unquestionably a single severe trauma, as, for instance, a kick by a horse. Nearly one-half of all the cases observed in the front of the thigh, involving the quadriceps extensor muscle. This and the flexor muscles of the arm seem to be

the most common sights. The symptomatology is, as a rule, characteristic. Following a severe trauma there may be noticed the usual clinical phenomena, namely, localized swelling, tenderness, ecchymosis and disturbance of function. The ultimate prognosis is good. So far as the individual operation is concerned, it depends largely on the stage in which it is performed. There is always tendency to recurrence in those patients operated on early during the period of activity of the osteoid tissue. In later cases the condition does not tend to recur, that is, cases in which growth of bone has ceased. The pathology of the condition has given rise to a great deal of discussion, and it is yet not definitely determined. As prophylactic measures, aspiration and pressure are of somewhat doubtful efficacy, although highly recommended. Early incision with the evacuation of effused blood, the thorough removal of small fragments and spiculæ of bone, with drainage of the affected area may, in some instances, prevent the formation of the trouble. Massage in the early stages is contraindicated, as it may affect unfavorably the development of the trouble by stimulating the production of bone. The indications for operation are the presence of the tumor, the disturbance of function, pain, etc.

Cholecystenterostomy in Certain Cases of Pancreatitis

DR. LE GRAND GUERRY, Columbia, S. C., made a plea for the more general use of this operation in this disease. He reported a case which is typical of a number to serve as a concrete illustration.

Mr. M., aged 38, married, several years ago had an attack of pain in the gall-bladder region with slight jaundice, pain occasionally radiating under the right shoulder, slight fever, indigestion, etc. These attacks occurred at infrequent intervals, but there was gradual weakening and loss of flesh. There was no sugar in the urine. A diagnosis of gall-stones or pancreatitis or both was made, and at the operation a slightly distended gall-bladder, with no stones, was found. The bladder was full of the characteristic ropy, tarry, black bile with a well-marked colon bacilli odor to it. The head of the pancreas was markedly enlarged. Operation consisted in cholecystotomy after the common duct had been thoroughly explored and a probe passed into the duodenum to insure the patency of the choledochus. Drainage was continued three months, during which time the patient gained twenty pounds in weight and was completely restored to health. Later, he had another attack, at which time cholecystenterostomy was done with the result that he has been permanently relieved from all of his symptoms and is now in perfect health.

Pancreatic Hemorrhage and Acute Pancreatitis

DR. JOSEPH RANSOHOFF, Cincinnati: I here report three cases, two of the former, and one of the latter. They were all of the ultra-acute type. In two of the cases the hemorrhage into the free peritoneal cavity was very extensive, so that one might have thought of the rupture of one of the large vascular viscera or of a large mesenteric vein. In the third case the fluid was only tinged with blood. In two of the cases in which the hemorrhage was very severe, no fat necrosis was seen at the time of operation. In the third a fat necrosis led to the diagnosis during the operation. In one of the acute cases with severe hemorrhage, the patient recovered after laparotomy with drainage and gauze packing. In one of the fatal cases, fat necrosis was not seen at the time of the operation nor after autopsy was made. In none of the cases was a diagnosis made. In one it was thought of on account of the slight jaundice which was present. While, as in phlegmonous conditions elsewhere, it would seem necessary that the lesion of the pancreas should be attacked in every case from an academic viewpoint, it is not practicable in all cases. The condition of the patient is often so desperate, that a prolonged search for the lesion would be fatal, while drainage and gauze packing properly placed would give the patient a chance for recovery. Statistics show the value of attacking the pancreas in a formal way as part of the operative interference as compared with drainage alone. Statistics, however, can have little value in determining the procedure to be adopted when one considers the great variation which exists in the symptoms at the time an operation is performed. Each case must be considered on its own merits and the operator must know to what extent operative interference beyond drainage and walling off the focus of the disease with tampons the patient will tolerate. No fixed and fast rules should be laid down. In regard to chronic pancreatitis, I object to the off-hand way in which a diagnosis is often made at an operation by the sense of touch alone and regardless of the existence of the well-known clinical evidence of chronic pancreatic disease.

(*To be continued*)

Marriages

ROBERT ABERCROMBIE SMITH, M.D., to Miss Emily Wilk, both of Chicago, January 1.

VICTOR MAURICE GORE, M.D., to Miss Hazel Wilkinson, both of Kingfisher, Okla., December 22.

BRADFORD ALLEN CAMFIELD, M.D., to Miss Augusta Esther Butts, both of Chicago, December 23.

ALBERT LEE YOCOM, JR., M.D., to Miss Jennie Marie Curtis, both of Chariton, Iowa, December 25.

ELEANOR JANE TAYLOR, M.D., York, Pa., and Rev. Edwin E. Calverly, of Philadelphia, September 6.

MARSHALL W. WEIR, M.D., to Miss Jessie May Watson, both of Oklahoma City, Okla., December 23.

SYLVESTER WESLEY THORNE, M.D., to Miss Helen Mary Denny, both of Memphis, Tenn., December 23.

Deaths

Samuel Benedict St. John, M.D. College of Physicians and Surgeons, New York City, 1870; a member of the American Medical Association; secretary of the Connecticut State Medical Society from 1883 to 1888; secretary of the American Ophthalmological Society from 1888 to 1908, and president in 1909; a member of the American Otological Society and American Academy of Ophthalmology and Oto-laryngology; president of the New England Ophthalmology Society in 1890-1891; a fellow of the New York Academy of Medicine; consulting ophthalmic and aural surgeon to St. Francis Hospital, Hartford, and Litchfield County Hospital; visiting ophthalmic and aural surgeon to the Hartford Hospital; a director of the Hartford Public Library; lecturer on ophthalmology in Yale University, New Haven, from 1881 to 1905; died suddenly at his home in Hartford, December 21, from angina pectoris, aged 64.

Reginald W. Garstang, M.D. Medical College of Indiana, Indianapolis, 1896; a member of the Indiana State Medical Association; formerly a member of the Association of Military Surgeons of the United States, and International Association of Railway Surgeons; surgeon to the Big Four System, Indianapolis; captain and assistant surgeon of the One Hundred and Fifty-ninth Indiana Volunteer Infantry during the Spanish-American War; for several years surgeon of Battery "A," Ind. N. G.; at one time police surgeon of Indianapolis; died at the Sanitarium of Dr. Albert E. Sterne in Indianapolis, December 21, from hemorrhagic meningitis due to an injury to the head received three weeks before while cranking an automobile, aged 35.

William Kelly Newton, M.D. College of Physicians and Surgeons, New York City, 1877; a member of the American Medical Association, American Public Health Association and New York Academy of Medicine; formerly coroner and health officer of New York City; first president of the Washington (D. C.) Pure Food Society; organizer of the board of health and first health officer of Paterson, N. J.; a trustee of the Free Public Library; a member of the staff of the Paterson General Hospital; and consulting physician to the Paterson Eye and Ear Infirmary; president of the New Jersey Sanitary Association; died at his home in Paterson, December 20, from peritonitis, aged 59.

Sarah Read Adamson Dolley, M.D. Randolph Eclectic Medical College, Rochester, N. Y., 1851; a member of the American Medical Association; professor of obstetrics in the Woman's Medical College of Pennsylvania in 1872 and 1873; president of the Provident Dispensary, Rochester, for several years; the second woman to receive a medical degree from an

American college; a member of the Monroe County (N. Y.) Medical Society, and delegate from that society to the American Medical Association at the Newport meeting; president of the Woman's Medical Society of New York State; died at her home in Rochester, December 27, aged 80.

John J. Archinard, M.D. Tulane University, New Orleans, 1893; professor of clinical microscopy in his alma mater; vice-president of the Louisiana State Medical Society; at one time president of the Orleans Parish Medical Society; medical inspector in Central America for the Louisiana State Board of Health; and later bacteriologist of the board; assistant in the Charity Hospital; surgeon of the Fourth Battalion, La. N. G.; and later major of the Second Louisiana Infantry U. S. V., and brigade surgeon with service in Cuba during the Spanish-American War; died at his home in New Orleans, December 27, from cerebral hemorrhage, aged 38.

George Mitchell, M.D. Medical College of Ohio, Cincinnati, 1862; a member of the Ohio State Medical Association; formerly professor of therapeutics and materia medica in the University of Wooster, Cleveland; censor of the Cleveland College of Physicians and Surgeons; a member of the board of trustees of the Ohio Wesleyan University, Delaware; a trustee of the Columbus State Hospital; president of the pension board of Mansfield, Ohio; assistant surgeon of the One Hundred and Second Ohio Volunteer Infantry during the Civil War; died at his home in Mansfield, December 17, from pneumonia, aged 72.

Evermont Ward Witten, M.D. Missouri Medical College, St. Louis, 1891; a member of the Oklahoma State Medical Association; professor of materia medica and therapeutics and clinical medicine in Oklahoma Medical College; a member of the medical staff of Bethany and St. Anthony's hospitals, Oklahoma City; physician of Oklahoma county; city physician for eight years; and a member of the local pension examining board; died at his home in Oklahoma City, December 17, from cerebral hemorrhage, aged 52.

John Benjamin Ruffell, M.D. Hahnemann Medical College, Philadelphia, 1898; Medico-Chirurgical College of Philadelphia, 1900; a member of the Medical Society of the State of Pennsylvania; for ten years assistant to Dr. L. Webster Fox; visiting physician to the eye department of the Medico-Chirurgical Hospital; died at his home in Philadelphia, December 22, from pneumonia, aged 33.

Edward F. Taylor, M.D. University of Pennsylvania, Philadelphia, 1853; one of the oldest members of the Monmouth County (N. J.) Medical Society; and for many years visiting surgeon to the Monmouth Memorial Hospital, Long Branch; surgeon of volunteers throughout the Civil War; died at his home in Middletown, N. J., December 11, from senile debility, aged 79.

Edward L. Perrault, M.D. University of California, San Francisco, 1885; a member of the American Medical Association; at one time a member of the board of supervisors of San Francisco; formerly chief surgeon of the Oregon Short Line Hospital, Boise, Idaho; died at Lane Hospital, San Francisco, December 15, from pneumonia, aged 48.

Wilson Lee South, M.D. Louisville, 185—; a surgeon in the Confederate Service during the Civil War; and afterward a practitioner in Texas; twice a member of the territorial legislature of New Mexico and county judge; formerly mayor of Trinidad, Colo.; died at the home of his daughter in Denver, November 29, from senile debility, aged 80.

Frank Eugene Risley, M.D. New York Homeopathic Medical College, New York City, 1889; for 15 years physician in charge of the Brooklyn Nursery and Infant Hospital; a member of the visiting staff of the Cumberland Street and Prospect Heights hospitals; died at his home in Brooklyn, December 10, from heart disease, aged 55.

William Henry St. Clair (years of practice, Ill., 1877); a member of the American Medical Association; said to have been the oldest practitioner of Effingham county, Ill., where he had practiced for forty-two years; died at his home in Effingham, November 19, from heart disease, aged 81.

Henry Orne Stone, M.D. Harvard Medical School, Boston, 1841; said to have been the oldest alumnus of that institution; one of the founders of the Framingham Public Library; a prominent abolitionist; died at his home in South Framingham, December 13, from paralysis, aged 91.

William H. Wheeler, a Confederate veteran; for two terms collector of internal revenue; twice a representative from Forsyth county in the legislature; for four years mayor of Winston-Salem, N. C.; died at his home in that city, April 23, from tuberculosis, aged 70.

Jacob Schneider, M.D. Cleveland University of Medicine and Surgery, 1871; formerly of Cleveland, Ohio; for thirty years house physician to the German Methodist Orphan Home, Berea, Ohio; died at his home in Daytona, Fla., December 11, from pneumonia, aged 64.

Guy Melville Dunning, M.D. University of Michigan, Ann Arbor, 1904; a member of the American Medical Association; and a specialist in diseases of the eye, ear, nose and throat; died at his home in Lansing, Mich., December 24, from pneumonia, aged 40.

Thomas M. Curran, M.D. University of Pennsylvania, Philadelphia, 1882; a veteran of the Civil War; for more than 50 years a practitioner of York county, Pa.; died at his home in Cross Roads (R. F. D., Felton), December 19, from cerebral hemorrhage.

John J. Weeks (license, Ohio, years of practice, 1896); at one time editor of the *Medina* (Ohio) *Gazette*; and provost marshal during the Civil War; died at his home in Cleveland, December 9, from asphyxiation by natural gas, aged 81.

Edwin P. B. Wilder, M.D. Chicago Medical College, 1874; district surgeon for the hospital fund of the Union Pacific Railroad; coroner and health officer of Wallace county, Kan.; died at his home in Sharon Springs, December 9, aged 55.

Elizabeth Genevieve Monville, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1909; assistant demonstrator in anatomy in her alma mater; died in the Woman's Hospital, Philadelphia, December 4, from nephritis, aged 33.

William I. Stark, M.D. Pulte Medical College, Cincinnati, 1881; of Terre Haute, Ind.; was instantly killed in a collision between a passenger train of the Vandalia System and a street car in Terre Haute, December 15, aged 52.

Irvin Negus Frasse, M.D. University of Pennsylvania, Philadelphia, 1890; formerly of Soquel, Cal.; a member of the American Medical Association; died at his home in Monterey, Cal., December 17, from heart disease, aged 44.

Henry Holcombe Malone, M.D. New York University, New York City, 1860; a member of the Medical Association of the State of Alabama; a Confederate veteran; died at his home in that city, December 19, aged 72.

Robert Mark Wilson, M.D. Kansas Medical College, Topeka, 1899; of Nortonville, Kan.; a member of the American Medical Association; died in Topeka, Aug. 12, 1908, from cerebral hemorrhage, aged 38.

John W. Steffin, M.D. College of Physicians and Surgeons, Chicago, 1894; physician of Cheboygan county, Mich.; and health officer of Cheboygan; died at his home in Cheboygan, December 3, aged 52.

William H. Kynett, M.D. College of Physicians and Surgeons, Chicago, 1885; a veteran of the Civil War; died at his home near Bartow, Fla., November 13, from chronic bronchitis, aged 67.

Frank P. Dundore, M.D. Jefferson Medical College, Philadelphia, 1870; a member of the Medical Society of the State of Pennsylvania; died at his home in West Leesport, December 15, aged 61.

Richard Henry Duff, M.D. Western Reserve University, Cleveland, Ohio, 1884; a member of the American Medical Association; died at his home in Girard, Pa., December 15, aged 53.

Almon Brooks, M.D. University of Virginia, Charlottesville, 1865; a prominent specialist in internal medicine; died at his home in Chicago, December 25, from valvular heart disease, aged 68.

Oscar C. Webb, M.D. Maryland Medical College, Baltimore, 1904; a member of the Medical Association of Georgia; died at his home near Gray, June 21, from tuberculosis, aged 33.

Samuel Wheeler Shaw (years of practice, Ill., 1901); for 47 years a practitioner of Chicago; died at his home in that city, December 20, from arteriosclerosis, aged 86.

William Bowman Chalfant, M.D. Western Reserve University, Cleveland, Ohio, 1869; died at his home in Pennsville, Pa., December 19, from arteriosclerosis, aged 74.

Ruth Barstow, M.D. John A. Creighton Medical College, Omaha, Neb., 1909; died at her home in Council Bluffs, September 1, from valvular heart disease, aged 23.

John M. Yancey, M.D. Reform Medical College, Macon, Ga., 1856; died at his home in Russellville, Ark., December 13, from pneumonia, aged 77.

Wilson H. Van Dusen, M.D. Miami Medical College, Cincinnati, 1869; died at his home in Lancaster, Wis., December 2, aged 63.

Book Notices

ROTUNDA PRACTICAL MIDWIFERY. By E. Hastings Tweedy, M.D., F.R.C.P.I., Master of the Rotunda Hospital, and G. T. Wrench, M.D., Late Assistant Master. Cloth. Pp. 464, with Illustrations. Price, $6. New York: Oxford University Press.

When the American Medical Association and the Association of American Colleges are working to perfect a time schedule of required studies and the American Gynecological Society is studying the teaching of obstetrics in American medical colleges, it is interesting to learn that the master of Rotunda Hospital says that "the requirements of practical midwifery are so inadequately provided for in the curriculum of our universities and licensing corporations that it is not an exaggeration to say that many recently qualified practitioners are a danger rather than a help to their lying-in patients." The book is written as a concise guide in the elucidation of the difficulties of obstetrics and aims to present the practical aspect of the subject.

Only about one-sixth of the book is devoted to normal pregnancy, labor and puerperium, but the diagnosis and management of pregnancy and the conduct of labor are discussed with great clearness. It is interesting to note that the authors do not hesitate to mention proprietary medicines and manufacturers' names with a freedom that would hardly seem proper to an American author. Telephones do not seem to be in common use, for the nurse is directed to "write a letter to you before breakfast to tell you that labor has started." It is consoling to learn that "in the hospital 50 per cent. of our primiparæ got torn perineums to a greater or less extent, and have to be stitched." It is rather surprising, however, to hear that in case of "retention of the membranes in the uterus without hemorrhage the patient is given a dram of ergot and the membranes allowed to come away in the lochia, which they usually do without trouble in a few days."

In Part 2, under the abnormalities of pregnancy, we turn with special interest to the subject of accidental hemorrhage. The well-known "Rotunda" treatment is described carefully and illustrated. The illustration of the method of infusion into the breast shows the injection actually into the breast, a practice which we hope is not in reality common. The treatment of eclampsia is eliminative and non-operative unless the cervix is dilated so that extraction is possible.

The chapters on dystocia are clear and satisfactory. The diagnosis and treatment of abnormal presentation is especially thorough and practical. In the discussion of forceps it is singular that the awkward lateral position of the patient is still retained. It is true that the author says "If the pull begins to prove hard get the patient on to her back." It is also hard to understand why so important an operation is done on the bed and why the genitals are not shaved.

The discussion of puerperal infection is very satisfactory, especial attention being given to the question of natural and acquired immunity. The management of the breast is not treated very fully. In general the puerperium is somewhat slighted. The chapters on the baby, however, are unusually thorough.

The authors have succeeded in their efforts to present the subject in a brief practical way and in simple language, and from the standpoint of the practitioner who has largely to rely on his own resources.

EXERCISE IN EDUCATION AND MEDICINE. By R. Tait McKenzie, B.A., M.D., Professor of Physical Education and Director of the Department, University of Pennsylvania. Cloth. Pp. 406, with 346 illustrations. Price, $3.50 net. Philadelphia: W. B. Saunders Co., 1909.

Dr. McKenzie has succeeded admirably in his effort to present the subject of physical education in an effective way to three hitherto widely separated groups of people, school teachers, teachers of physical training, and physicians. The recent rapid growth of an appreciation of the place and value in an educational system of physical training and as an important adjuvant in preventive and curative medicine makes this book particularly timely and opens for it a wide field of usefulness.

The subject-matter is well arranged, and the various topics are treated in a very readable way, which is popular a untechnical without sacrificing accuracy. The amount of space devoted to each subject is necessarily small in a book that covers so wide a range as this. The illustrations are numerous and bear close and helpful relation to the text. The pictures are well chosen, instructive and artistic.

The author has brought together in the first part of the book considerable historical material relating to the beginnings and governing principles of the various systems of physical training. The discussion of the German, Swedish, Japanese jiu-jitsu, and Delsarte systems is critical and direct. On page 128 the statement that "in a game of football the time occupied in actual play is only four or five minutes" is open to criticism, as under the new rules it is not uncommon for a team using series plays to continue in action for three or four minutes without interruption, so that the total time spent in actual play is many times larger than here stated.

The classification of athletic games, exercises on gymnastic apparatus, etc., from the point of view of the physiologic effects, parts of the body brought into play, and most suitable age, is very suggestive; but one wonders why basket-ball, which makes a heavier demand on speed, endurance, and attention than almost any other form of team competition, should be classed with work with gymnastic apparatus instead of with other athletic games. The chapters on the physical education of the blind and the deaf-mute and of the mentally and morally defective are excellent in presenting a detailed statement of the latest methods that are being successfully used in this difficult field, and in giving reports of the markedly beneficial effects of physical training in these groups. The section on exercise in medicine will prove to be of interest to the medical practitioner, to whom it will be of real value in suggesting supplements to the purely medical treatment of the conditions there discussed. There is a very real danger, however, in the attempted application of these principles and methods by physical directors who have had, at best, a very superficial training in medical subjects, to cases of circulatory disturbance, hernia, and extreme obesity. Such cases should not be treated by a non-medical man unless he has had a thorough training in medical gymnastics or unless he is working under the close supervision of a trained physician.

The book is worthy of careful study by both educators and physicians, and the sane, comprehensive treatment of the wide range of subjects that are included in physical education should be very helpful in stimulating the further extension of this work in both education and medicine.

MEDICAL SOCIOLOGY: A Series of Observations Touching on the Sociology of Health and the Relations of Medicine to Society. By James Peter Warbasse, M.D., Surgeon to the German Hospital. Cloth. Pp. 355. Price, $2. New York: D. Appleton and Company, 1909.

"Medical Sociology" as a title of a work for the use of physicians seems stranger in this country than it would in Europe. German universities require of their medical students a certain knowledge of economics and sociology, and in order to supply the older practitioners with such knowledge special courses are provided in Berlin and other universities dealing with social evils and conditions and the most effective ways to combat them. The University of Vienna has recently taken the step of establishing a chair of social medicine. The author of this work gives in the preface his thesis: that as medicine is the science devoted to the study of health, so medicine has as its special aim the investigation of conditions which destroy health, the study of their causes, their prevention and their treatment. Dr. Warbasse has spoken frequently before medical societies on this subject and some of these addresses appear as chapters in his book. A number of chapters are devoted to the question of sexual hygiene, which is openly and freely discussed, as it ought to be in the interest of society at large. The stand taken in almost every instance is a broad-minded one, although some readers will feel that the author departs a little from it where he speaks of the influence of religious doctrines and superstitions. In opposition to many of his colleagues, he is in favor of a wide diffusion of medical knowledge among the public, his argument being that the man who knows most about his body and its functions will take the best care of it.

A good deal of space is devoted to the necessity of cooperation among physicians to secure their own best interests. This cooperation is not only possible in large cities, but has become

very effective in smaller places. There physicians club together, each contributing some standard work, to make up an up-to-date medical library, placing the most expert knowledge within the reach of every member. This club serves, besides, as a common meeting-place for the discussion of interesting cases.

EINFÜHRUNG IN DIE MODERNE KINDERHEILKUNDE. Ein Lehrbuch für Studierende und Aerzte. Von Dr. B. Salge, Professor der Kinderheilkunde in Frieburg i. B. Cloth. Pp. 356, with 9 illustrations. Price, 9 marks. Berlin: Verlag von Julius Springer, 1909.

This book is intended, as the title implies, as an introduction to the study of pediatrics. The whole subject is covered, not exhaustively as in a text-book, but rather with full emphasis on those things which pertain especially to infancy and childhood, and passing quickly over such diseases as are practically identical in childhood and adult life. It is intended to meet the needs of the student who approaches the subject of pediatrics for the first time, after he is fairly familiar with internal medicine; and of the busy practitioner who wishes to keep abreast with the very latest advances without wading through original articles and monographs or more exhaustive text-books. This purpose it fulfils admirably.

Especial interest attaches to the chapters on infant-feeding and nutritional disorders in infancy. One hears much at the present time of Czerny and of Finkelstein. Salge's book, perhaps largely because it is the newest, combines for the first time in one volume, and that fortunately not a large one, all of this wealth of new ideas that seems destined to exert a determining influence on our ideas concerning these subjects. To those who wish to familiarize themselves with these ideas without wading through the original articles and books, this compact, clear-cut exposition will heartily commend itself.

A PRACTICAL TREATISE ON DISEASES OF THE SKIN. By James Nevins Hyde, A.M., M.D., Professor of Dermatology in Rush Medical College, Chicago. Eighth Edition. Cloth. Pp. 1109, with 223 engravings and 58 plates in colors and monochrome. Price, $5. Philadelphia: Lea & Febiger, 1909.

The author states in the preface that the untimely death of his associate, Dr. Frank H. Montgomery, delayed the appearance of this edition. The work has been carefully revised and new matter added, which has necessitated the addition of 250 pages. Considerable space is devoted to diseases of the tropics. Pellagra is classed as a "tropical disease of uncertain nature." The symptoms, etiology, diagnosis and treatment are summarized briefly, and a fairly complete bibliography is given. New articles have been added on the following subjects: prurigo nodularis, several of the special forms of erythema, the "fourth disease," paraffin prothesis, osteoma and calcification of the skin, meralgia paresthetica, acrodermatitis pustulosa hiemalis, lichen spinulosus, keratolysis exfoliativa congenita, lipoma, Fordyce's disease, causalgia, leucemia and pseudoleucemia cutis, tinea ciliorum and, in particular, diseases produced by animal parasites, especially the brown-tail moth dermatitis. The book therefore is brought well up to date and will continue to hold the high place it has heretofore held as a standard text-book on diseases of the skin.

A TEXT-BOOK OF SPECIAL PATHOLOGY. By J. Martin Beattie, M.A., M.D., Professor of Pathology and Bacteriology, University of Sheffield, and W. E. Carnegie Dickson, M.D., B.Sc., F.R.C.P., Lecturer on Pathologic Bacteriology in the University of Edinburgh. Cloth. Pp. 509, with illustrations. Price, $5. Philadelphia: P. Blakiston's Son & Co., 1909.

In reviewing the text-book on general pathology by the same authors, we spoke of it as being almost an excellent book, but falling short of excellence by reason of its lack of thoroughness and the evident lack of high ideals in the author's conception of medical education. The volume of special pathology falls far short of the general pathology. It seems to be intended for the student who wishes his lessons in pathology in as compact a form as possible, without any troublesome whys and wherefores. It will certainly never stimulate a student to do much collateral reading or independent thinking. There is little fault to be found with the book on the score of accuracy, and the subjects are presented well, but the most modern views are not always given as much attention as they deserve in even so compact a treatise. Except for the illustrations the subjects are handled about as completely and well in good text-books on practice, where the pathologic physiology is usually discussed more effectively. The reproductions are excellent, although not so prominent a feature as in the general pathology, from which many of them are borrowed.

THE PHYSICIAN'S POCKET ACCOUNT BOOK. By J. J. Taylor, M.D. Flexible leather, 24 pages of practical instructions for physicians, 216 pages of accounts. Price, $1. Philadelphia: The Medical Council, 4165 Walnut Street.

This book is so arranged with page and column headings that one simple entry is intended to complete the bookkeeping as far as that particular entry is concerned, no posting to a ledger being necessary. The information is in such shape that it is easily understood by any one, no hieroglyphics being used to indicate the service, and is therefore said to stand the test of the courts when it is necessary to bring suit on an account. Each account is kept separately and a glance shows its exact status. Besides the 216 pages for accounts, the book contains an index, business suggestions, suggestions for the treatment of poisoning, table of infectious diseases, average fee bill, record of births, deaths and vaccinations and a cash account. Its use should simplify the bookkeeping of physicians and save them much time.

BACTERIOLOGY FOR NURSES. By Isabel McIsaac, Author of "Primary Nursing Technique," etc. Cloth. Pp. 176, with illustrations. Price, $1.25. New York: The Macmillan Co., 1909.

The average nurse, at least after graduation, requires only an elementary knowledge of bacteriology, and the author states in the preface that in this work for pupil nurses no attempt has been made to do more than endeavor to present a practical arrangement of the subject. A schedule is suggested for laboratory work compiled from several outlines in use in various schools. The phraseology is simple and the book is practical.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ALABAMA: Montgomery, January 11. Chairman, Dr. W. H. Sanders.
DISTRICT OF COLUMBIA: Washington, January 10. Sec., Dr. George C. Ober, 210 B Street., S. E.
ILLINOIS: Coliseum Annex, Chicago, January 19-21. Sec., Dr. J. A. Egan, Springfield.
INDIANA: Room 120, State House, Indianapolis, January 11. Sec., Dr. W. T. Gott.
NEW MEXICO: Santa Fe, January 10. Sec., Dr. J. A. Massie.
OKLAHOMA: Ione Hotel, Guthrie, January 11. Sec., Dr. Frank P. Davis, Enid.
SOUTH DAKOTA: Sioux Falls, January 12-13. Sec., Dr. F. W. Freyberg, Mitchell.
VERMONT: Montpelier, January 11-13. Sec., Dr. W. Scott Nay, Underhill.
WISCONSIN: Milwaukee, January 11. Sec., Dr. John M. Beffel, 3200 Clybourn Street.

Report of the Commissioner of Education for 1909

The last report of the United States Commissioner of Education, which has recently made its appearance, shows how deep is the interest now being taken in educational standards and how large is the number of boards, commissions, councils and associations which are at work in the development of such standards. This report will not only be a convenient reference book for information regarding the work which each agency is doing but it will help to bring about more cooperation between these agencies.

Those who are interested in higher standards of medical education, and who are dealing with only one department of education, have long since fully appreciated that all agencies should cooperate to bring about a carefully planned educational system wherein the work and limitations of each department, elementary, secondary, collegiate, professional and technical, are clearly outlined. It is of no less importance that the various state educational boards which have the legal power to create standards should work together for the development of a national standard rather than a large number of dissimilar or even conflicting standards. Toward these ends the annual reports of the Commissioner of Education are exerting a decided influence. The chapters relating to the

educational progress in other countries also allow of valuable comparisons and will suggest similar improvements at home.

The statement is often heard that a thing is valued in proportion to the amount of money paid for it. Since the reports of the Commissioner of Education may be obtained free of cost we doubt whether they really receive the appreciation which is due them for the highly important and valuable information they contain.

Connecticut November Report

Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the written examination held at New Haven, Nov. 9-10, 1909. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 22, of whom 17 passed, 4 failed, and 1 withdrew. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University	(1909)	79
Yale Medical School (1908) 82.5;	(1909)	75.2
Kansas Medical College	(1902)	77.7
Baltimore Medical College	(1909)	79.2
College of Physicians and Surgeons, Baltimore	(1909)	77.7
Maryland Medical College	(1908)	77.7
Johns Hopkins University	(1909)	82.6
Harvard Medical School (1899) 87.2;	(1904)	76.5
Cornell University Medical College (1903) 79.6;	(1909)	83.9
Columbia University, College of Phys. and Surg.	(1909)	80.2
New York University Medical College	(1884)	78.2
Long Island College Hospital	(1909)	83.3
Queen's University, Canada	(1909)	81
University of Naples, Italy	(1905)	75
FAILED		
Howard University	(1904)	71.2
Georgetown University	(1908)	73.3
Yale Medical School	(1909)	74
Jefferson Medical College	(1909)	74.5

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Reduced Incomes of Physicians

In the *Lancet-Clinic*, November 27, appears a letter in the correspondence department signed by "A Medicus, Jr.," which discusses the economic side of the practice of medicine. Commenting on a previous communication, Medicus admits the influence of recent financial depressions, increasing accessions to the ranks from medical colleges, the influence of present-day preventive medicine and public sanitation, etc., in decreasing the average income of physicians, but adds that three great evils are mainly responsible for present economic conditions: the abuse of medical charity, the development of contract practice and the lack of system on the part of individual physicians in keeping and collecting their accounts.

Discussing the average income of the physician, which he places at $600 per annum, or about $1.60 per day, he says, "Compare this with the average wage of the most ordinary laborer and then you may feel that comparisons are indeed odious at times. If you wish to know where the shoe pinches most, ask the physician's wife and his creditors. Ministers and school teachers' wives have been immortalized in prose and poetry for their ability to make both ends meet and for their heroic fortitude in facing genteel poverty. The physician's wife is fast joining them." He states that the names of 20,000 physicians appear on the dead-beat list of a national organization and that an officer of the organization states that the list should contain the names of at least 20,000 more. This, he says, is six times larger than the average number of dead-beats in other professions and occupations, "which," he says, "either speaks very ill of our morals or points to some very erroneous conceptions of our relations to the general public."

After discussing the abuse of medical charity and the work done along that line in Chicago and the development of the contract and lodge practice system in Germany, he takes up the third factor, namely, lack of system in keeping and collecting accounts, to which he attributes a large share of the economic loss which the profession is sustaining.

Legislative Notes

STATE LEGISLATURES IN SESSION

Although an off year in state legislative work, twelve legislatures have met or will meet during the winter. The Georgia legislature met in November; the Kentucky and Virginia legislatures convened in December, while the following legislatures will assemble in January: Maryland, Massachusetts, Mississippi, New Jersey, New York, Ohio, Rhode Island and South Carolina. The Louisiana legislature will meet in May.

LEGISLATION PROPOSED IN KENTUCKY

In Kentucky the work has already been outlined, the following bills relating to health matters having been prepared for presentation to the state legislature: State Board of Health appropriation, vital statistics, medical inspection for third and fourth class cities, abortion, and tuberculosis sanatorium bills. In an editorial in the *Kentucky Medical Journal*, December 15, it is stated that these bills are substantially the same as those passed by an almost unanimous vote of the legislature two years ago, but vetoed by Governor Wilson for various reasons. The bills have been modified so that it is hoped that they will be acceptable to the governor.

The State Board of Health appropriation bill provides for the appropriation of $30,000 a year for the state board to establish and equip a state laboratory, to employ a bacteriologist, to conduct an annual school for county and city health officers for instruction in the latest practical methods of preventing disease, to hold public health conventions in connection with farmers' and teachers' institutes, to investigate the water supply, to establish and maintain a board of vital statistics, to control diseases among domestic animals, and to pay the general expenses of the board. The vital statistics bill follows the line of the model bill endorsed by the American Medical Association.

The medical inspection bill provides for the medical examination of all persons teaching or proposing to teach and all pupils attending or proposing to attend any public or high schools in cities of the third and fourth class. It provides that teachers shall be examined semi-annually and pupils at the beginning of each term or oftener if requested by the teacher, by the superintendent of the school, or by the board of education. Any teacher found to have tuberculosis in any form or any other contagious disease shall not be permitted to teach. Any pupils found suffering from contagious or infectious diseases are not to be admitted until permitted by the medical inspector. City physicians or physicians employed by the board of education are to make the examinations.

The abortion bill has been prepared by Hon. Aaron Kohn and provides that it shall be unlawful for any person to prescribe or administer to any pregnant woman or to any woman whom he supposes to be pregnant, any drug, medicine or substance with the intent thereby to procure the miscarriage of such woman or to use any instrument or means whatever, unless such miscarriage be necessary to preserve her life, under penalty of a fine of from five hundred to one thousand dollars, and imprisonment for from one to five years. In case of miscarriage and the death of the child results the person responsible for the miscarriage shall be guilty of a felony and on conviction punished by from two to twenty-one years in the penitentiary. In case the death of the woman results the person offending shall on conviction be held guilty of murder or manslaughter. The consent of the woman shall be no defense and she shall be a competent witness in any prosecution under the act.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Fifth Month—Third Weekly Meeting

DISEASES OF THE INTESTINES

CATARRHAL ENTERITIS: Etiology. Primary causes, improper food, toxic substances, nervous influences, changes in weather, changes in intestinal secretions. Secondary causes, infectious diseases, typhoid, tuberculosis, etc.

Inflammatory disturbances, peritonitis, etc. Circulatory disturbances, and cachexia of cancer, anemia, etc. Clinical forms, (a) acute, (b) chronic diarrhea; treatment of each.

CROUPOUS ENTERITIS: Etiology, (a) toxic, mercury, lead, etc.; (b) infections, pyemia, pneumonia; (c) terminal process in chronic nephritis, cirrhosis of liver, etc.

ULCERATIVE ENTERITIS: (a) Follicular ulcer; (b) stercoral ulcer; (c) simple ulcerative colitis, (d) cancerous ulcer, (e) ulceration from external perforation, (f) tubercular, syphilitic and typhoid ulcerations. Etiological diagnosis of intestinal ulceration.

DYSENTERY: (a) Amebic, (b) bacillary. Etiology and diagnosis of each.

APPENDICITIS: Differential diagnosis, from biliary lithiasis, renal lithiasis, tubo-ovarian disease, intestinal obstruction, intestinal colic, Dietl's crisis, acute hemorrhagic pancreatitis, hysteria.

INTESTINAL OBSTRUCTION: (a) Strangulation, (b) intussusception, (c) volvulus, (d) strictures and tumors, (e) abnormal contents. Diagnosis in each; location of obstruction.

ENTEROPTOSIS, SPLANCHNOPTOSIS: (a) Without symptoms, following repeated pregnancies, etc.; (b) with symptoms, associated with neurasthenia. Symptoms and physical signs.

Medicolegal

Validity of Law and Board of Health Order Prohibiting City Discharging Raw Sewage Into Stream

The Supreme Court of Montana says, in the case of Miles City vs. Board of Health of the State of Montana (102 Pac. R. 696), that, by an act of 1907, the state, in the valid exercise of its police power, has said that hereafter no polluting sewage and no human excrement shall be discharged into any stream which is the source of water supply for a city or town until such deleterious matter is rendered harmless by some means of sewage purification acceptable to the State Board of Health. Section 8 of this act authorizes the board to make, or cause to be made, a thorough investigation in a case of this character; and, if in the judgment of the board the public health so requires, the board may make such an order as one in question here prohibiting the city from extending a sewer, into a river, and directing that the city at as early a date as practicable dispose of its sewage in some sanitary manner acceptable to the board. This section does not contemplate a public trial, but rather an ex parte (one-sided) investigation, and the legislature, being the repository of the police power of the state, could designate the State Board of Health as its agent, and prescribe the manner in which such police power should be exercised. If the board informs itself by any means, the fact that testimony is not taken is altogether immaterial.

Moreover, the court holds that, notwithstanding the length of time the city has enjoyed the privilege of discharging its sewage into the river, the state may, in the interest of the public health and safety, regulate such use, or, if necessary, prevent the continuance of it. Indeed, if the state had consented to the use of the river by the city for the purpose of discharging its sewage therein, such consent would not have amounted to more than a license, which the state might revoke whenever public interests required it.

This statute does not deprive the city of any property right. It does not forbid the city using the river for the purpose of discharging its sewage, provided the sewage has been subjected to some practical means of purification. The statute looks only to a proper regulation of the use asserted, and not to a denial of the use; and the mere fact that the city was making use of the river for discharging raw sewage into it at the time this statute was enacted, which modifies such use, is not any valid objection to the statute.

Then, since the statute is couched in prohibitive terms, and, in addition thereto, provides that pending an appeal to the district court the order of the board shall continue in force, unless otherwise ordered by the board, the conclusion would seem irresistible that the city has the burden of showing that the order was not justified.

Liability for Malarial Fever of Maintainers of Breeding Places for Mosquitoes—Expert and Other Evidence

The Court of Appeals of Georgia holds, on the appeal of Towaliga Falls Power Co. vs. Sims (65 S. E. R., 844), a suit brought by the latter party, that public service corporations in the construction of dams and in the backing of water must choose their sites with due regard to the surroundings. They are not authorized to maintain stagnant ponds, polluted pools of water, or places in which mosquitoes breed, in unusual numbers, to the endangering of the health of surrounding communities.

There was testimony in this case from which the jury might have found that the plaintiff had a spell of malarial fever as a result of being bitten by anopheles mosquitoes, bred in unusual numbers in stagnant water caused by the power company's dam, but that the mosquitoes would have been incapable of communicating the disease if they had not previously bitten a person having malaria in his system. It is held that the court properly refused to charge the jury that under these circumstances the damages would be too remote to hold the company liable therefor.

Where the question is as to the cause of an attack of malarial fever suffered by the plaintiff, it is relevant for him to prove that the defendant erected a dam which caused the water to become stagnant and the mosquitoes to breed in unusual numbers; that previously there had been no malarial fever in the community; that the erection of the dam and the breeding of the unusual number of mosquitoes was followed by an epidemic of malaria; and that in the opinion of experts malaria is communicated by mosquitoes. The testimony is circumstantial, but of probative value.

Counsel ingeniously, and the court suspects, somewhat facetiously, argued in this case, the court says, that the mosquito is an animal ferae maturae (of a wild nature), and that in an action for damages done by a dangerous animal scienter (knowledge) on the part of the person harboring it is a necessary allegation. But, without making any specific classification of mosquitoes, the court holds that they are a common pest, and that the maintenance of a place where they breed in unusual numbers is such a menace to persons residing nearby as to make that place ordinarily a nuisance; and that if, as a result of the maintenance of such a place, the mosquitoes do in fact breed there, as they otherwise would not have bred, and become inoculated with malaria, and, in accordance with what is naturally to be expected, fly abroad and communicate malarial fevers, the proprietor of the breeding place is in legal contemplation proximately the author of the damage.

Testimony that prior to the creation of the pond there were but few mosquitoes and no cases of malarial fever in the community, that the pond had stagnant pools in it favorable to the breeding of mosquitoes, that, following its creation, the mosquitoes appeared in unusual numbers, and an epidemic of malarial fever broke out in the community, would, in connection with expert testimony that malaria is conveyed by mosquitoes, be relevant circumstantial evidence on the question as to whether the creation of the pond caused the epidemic of fever. The range of such testimony, like that in cases of experiments, is largely within the discretion of the trial judge.

Presumptively, any practicing physician is by virtue of his profession an expert on the methods by which diseases are communicated. In order to qualify one as an expert witness, it is not necessary that he or any one else should testify in so many words that he is an expert, but the fact that he is entitled to give expert testimony may be shown by a statement of his profession, occupation, education, and experience. The extent of the witness' knowledge or opportunities for accurate information on the subject may be shown either by the direct or the cross-examination. The weight to be given his testimony is for the jury. A practicing physician who has treated a case of malarial fever, and who is acquainted with surrounding conditions, is competent to express an

opinion as an expert on the causes of the fever, although his general ideas on the question may be out of harmony with those entertained by his profession generally and by the majority of scientific men.

When one is in possession of premises as a tenant and another maintains a temporary nuisance, whereby the premises are rendered unhealthful, and the tenant and dependent members of his household are made sick, the tenant may recover, not only for the diminution caused to the value of his leasehold interest by the fact that the premises have become undesirable for habitation, but also for the direct damages caused him by the illness of himself and his family. His illness and that of the household is evidentiary on the question as to whether the premises have been rendered undesirable for habitation and therefore of less rental value, but the pain and suffering, physican's bills, loss of time, etc., directly resulting from the illness, are elements of damage apart from the loss sustained in the shrinkage of the value of the property and there may be a recovery of the damages from both sources when the pleadings and the evidence are such as to authorize it.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

December 25

1 Preparation, Enthusiasm, and Self Sacrifice. J. MacFarland, Philadelphia.
2 A Personal Experience with the Method of Cesarean Section used in the Lying-In Hospital of New York. S. P. Warren, Portland, Me.
3 The State, the Municipality, and Tuberculosis. W. C. White, Pittsburg, Pa.
4 *Foreign Bodies Removed from the Ears. H. Foster, Kansas City, Mo.
5 The Infancy of the Practice of Medicine and Surgery. H. Pomeranz, New York.
6 Influenzal Meningitis. A. Hymanson, New York.
7 *Treatment of Tuberculosis by Succinimide of Mercury Injections. H. Freeman, New York.
8 Trachoma. L. J. Goldbach, Baltimore.

4. Foreign Bodies Removed from the Ear.—Foster reports eight cases to show the variety of foreign bodies which may find their way into the ears. The substances removed were: (1) Three live screw-worms; (2) a piece of a sharp-pointed slate pencil; (3) a bead; (4) a small stone; (5) a grain of wheat; (6) a grain of corn; (7) a small green electric light bug; (8) a bit of broken pencil.

7. Mercury in Tuberculosis.—In 8 cases of tuberculosis in which Freeman has used succinimid of mercury there has been improvement in the general condition, evidenced by increase in weight, normalizing of temperature and diminution of cough, expectoration, and night sweats. The destructive action of the mercury on the tubercle bacilli in two cases was strikingly apparent. Percussion and auscultation uniformly reflect the general improvement. Freeman believes that the inevitable conclusion to be drawn from such cases as those must be that, in succinimid of mercury, hypodermically administered, we have an efficient means of arresting tuberculous degeneration and of improving in a most striking manner the general condition of the patient. The only question which appears to remain for test is whether we may not have here a specific remedy for the disease in all stages at which the tissues are not yet so broken down and disorganized that reestablishment is a physical impossibility.

Medical Record, New York

December 25

9 Results Achieved by the Movement for Sanitary and Moral Prophylaxis—Outlook for the Future. P. A. Morrow, New York.
10 Freud's Conception of the Psychoneuroses. A. A. Brill, New York.
11 *Stenosis of the Larynx Cured by Intubation. E. Mayer, New York.
12 Study of the Eustachian Tube in Relation to the Radical Mastoid Operation. S. Oppenheimer, New York.
13 Studies with the Wassermann Reaction. E. C. White and S. D. W. Ludium, Philadelphia.
14 Frequency of Hepatic Sclerosis in Non-Alcoholics. A. L. Benedict, Buffalo.

11. Stenosis of the Larynx.—The three cases of laryngeal stenosis reported by Mayer were all due to different causes. The first was due to a gunshot wound, comminuting the thyroid cartilage, the second was a post-thyroid perichondritis, and the third was a recurrent granuloma of the larynx. The cases are of special interest, first because of their unusual nature, and second, because of the satisfactory results following intubation.

Lancet-Clinic, Cincinnati

December 11

15 The Outlining of Normal Organs, and the Diagnosticating of Diseased Conditions of the Pleura and Lungs by Means of Palpation. F. M. Pottenger, Monrovia, Cal.
16 Case of Traumatic Neurosis Illustrating Successful Psychotherapy. T. A. Williams, Washington, D. C.
17 The Simplified Faucial Tonsil Operation. O. J. Stein, Chicago.

December 18

18 Surgery of the Gall-Bladder. W. D. Haines, Cincinnati.
19 The Latent Gall-Stone. C. N. Smith, Toledo, Ohio.
20 Latent Duodenal and Gastric Ulcer. W. J. Stone, Toledo, Ohio.

Northwestern Lancet, Minneapolis

December 1

21 *Empyema: Diagnosis and Treatment. W. T. Adams, Elgin, Minn.
22 A Plea for Medical Inspection of Schools. R. M. Wheeler, Hot Springs, S. D.
23 Tumors of the Bladder. E. S. Judd, Rochester, Minn.
24 *Enlargement of the Prostate. F. R. Wright, Minneapolis.
25 Cicatricial Strictures of the Esophagus. W. Lerche, St. Paul.

21. Abstracted in THE JOURNAL, Nov. 27, 1909, p. 1850.

24. Enlargement of Prostate.—The points of interest in Wright's case are the small size of the tumor (150 grains), which completely closed the outlet of the bladder while at the same time it offered no obstruction to the passage of the catheter, and the smooth, even hypertrophy of the bladder wall, which showed no trace of trabeculæ or saccules.

Kentucky Medical Journal, Bowling Green

December 1

26 *Mental Diagnosis. E. M. Wiley, Lexington.
27 *The First Interview with the Patient. J. L. Atkinson, Campbellsville.
28 *Treatment of Mutilated Extremities. R. C. McChord, Lebanon.
29 *Delirium Tremens. F. M. Stites, Hopkinsville.
30 *Chronic Diseases of the Faucial Tonsils. S. G. Dabney, Louisville.
31 *The Pupils During Health and Disease. A. O. Pfingst, Louisville.
32 *Diagnosis of Acute and Chronic Mastoiditis. J. A. Stucky, Lexington.
33 *Treatment of Acute Mastoid Disease. L. S. Givens, Cynthiana.
34 Treatment of Chronic Mastoid Disease. J. T. Reynolds, Mt. Sterling.
35 Radical Treatment of Chronic Mastoid Disease. W. N. Offutt, Lexington.

26, and 28 to 33. Abstracted in THE JOURNAL, Nov. 13, 1909, pp. 1680, 1681.

27. First Interview with the Patient.—Atkinson speaks of the practice of medicine as a calling. He discusses the mission of the doctor, the confidential relationship of the medical adviser to the patient, and the necessity for such relationship, and methods to be employed.

Medical Fortnightly, St. Louis

December 10

36 Washington's Leper and America's Leper Colony. F. J. Koch, Cincinnati.
37 Relation of the Physician and Surgeon. H. C. Crowell, Kansas City, Mo.
38 The Problem of Living. C. Pope, Louisville, Ky.

Surgery, Gynecology and Obstetrics, Chicago

December

39 *Anatomic Considerations in Peritoneal Adhesions. J. C. Clarke, Philadelphia.
40 Operative Treatment of Puerperal Thrombophlebitis. J. Brettauer, New York.
41 *Etiology of Cholecystitis. J. E. Else, Pullman, Wash.
42 *Relation of the Thyroid and Thyroidism to the Toxemia of Pregnancy. G. G. Ward, New York.
43 Difficulties of Gall-Bladder Surgery. J. N. Baker, Montgomery, Ala.
44 *A Method of Obtaining More Reliable Knowledge of the Exact Areas of Pain Complained of by Patients Afflicted with Visceral Disease. P. A. Harris, Paterson, N. J.
45 Case of Typhoid Spine. J. Halpenny, Winnipeg, Canada.
46 *Cancer Mortality. J. A. McGlinn, Philadelphia.
47 Thrombi and Emboli—Postoperative Importance. H. Crouse, El Paso, Tex.
48 An Apparatus for Aspiration. J. H. Kenyon and E. H. Pool, New York.
49 Fracture of the Eminentia Capitata. H. Reinecking, Milwaukee, Wis.
50 Pseudo-Hermaphroditismus Masculinus Externus. K. Das, Calcutta, India.

51 Protective Appendicitis and Fourth Era in Surgery. R. T. Morris, New York.
52 *The Use of Rubber Elastic Bands for Drainage. E. S. Ryerson, Toronto.
53 Two Intractable Cases of Vesicovaginal Fistula. E. S. Stevenson, Rondebosch, Cape Colony, South Africa.
54 The So-Called Murphy-Fowler After-Treatment of Appendicitis. G. S. Brown, Birmingham, Ala.
55 Toxemia of Pregnancy. H. Morell, Regina, Canada.
56 The Table-Side Sterilizer. J. D. Singley, Pittsburg, Pa.

39. **Peritoneal Adhesions.**—Omental adhesions associated with traction, according to Clarke, act directly on the transverse colon and the stomach, limiting the function of both and giving rise to chronic symptoms, frequently classified under the glittering generality of indigestion. Kinking of the pylorus, direct tugging on the superior mesenteric artery through bad fixation and consequent traction on the omentum, and adhesions about the jejunum are all causes for gastric disturbances following local anl general peritonitis. Obstinate constipation without gastric disturbance suggests merely a distortion of the colon, whether in its transverse or sigmoidal sections. On the other hand, symptoms referable to the gastric area, such as eructations of gas and fluids, fulness after eating, with distress, should suggest the probability of the effects of the adhesions expending their force on the upper intestinal tract. For several years it has been the author's custom, at the completion of every abdominal operation, unless there was some lesion or operation on the colon contraindicating its hydraulic distention, to give by enema, while the patient is still under the anesthetic and in the Trendelenburg posture, from one and a half to two liters of salt solution. Through many observations he has found that not only is the entire colon partially filled, but that the fluid frequently backs out in a serpentine wave through the ileocecal valve into the ileum. In this way the transverse colon is naturally dropped back by the weight of the fluid into its normal situation, and the sigmoid flexure is untwisted and assumes its natural situation, if it happens to occupy, through the distortion of packs or operative manipulation, a bad position in the pelvis. The fluid, if the patient is still under the anesthetic, and if care is observed in placing her in bed, is almost invariably retained, acts as a splendid stimulant in overcoming shock, lessening the refrigerant effects of the anesthetic and the stress thrown on the kidneys. Not only is immediate post-operative tympanites of less frequent occurrence, but the ultimate convalescence and freedom from post-operative sequelæ incident to adhesions have been minimized. In other words, the transverse colon, when thus employed, is a most serviceable hot-water bag applied directly to the sympathetic system and great vessels. The fluid is rapidly absorbed, and not only gives the patient the stimulating value of the heat, but the even greater benefit of a large volume of fluid.

41. **Etiology of Cholecystitis.**—Else found by experimentation that motile organisms can and usually do reach the gall-bladder from the intestines by ascending the common and cystic ducts. Organisms rarely, if ever, reach the gall-bladder from the intestines by way of the portal vein. The tubercle bacillus and the ameba coli are probably exceptions to this. But these organisms produce an infection of the liver first, and an infection of the gall-bladder is secondary to the liver infection. These organisms extend deeply into the intestinal wall and probably enter the smallest branches of the portal vein directly. Infective organisms can reach the gall-bladder through another route, the exact course of which must be worked out.

42. **Thyroidism and Toxemia of Pregnancy.**—The study of the relation of thyroidism to the toxemia of pregnancy in the light of some of the recent researches as to the nature and treatment of Graves' disease is the basis of Ward's paper. He believes that the thyroid gland is in all probability concerned in promoting nitrogenous metabolism, because there is considerable evidence that it normally hypertrophies during pregnancy and plays an important part in the increased nitrogenous metabolic processes incident to that state. He regards it as very probable that the toxemia of pregnancy is largely dependent on faulty metabolism, at least an insufficient metabolism is an accompaniment which greatly adds to the seriousness of the condition. Failure of the thyroid to hypertrophy during pregnancy is probably followed by insufficient metabolism, and may result in the various forms of toxemia of pregnancy. Graves' disease, by materially altering the quantity and quality of the thyroid secretion, has an important influence on metabolic processes; therefore if associated with pregnancy, owing to the increased metabolism incident to that state, it becomes a grave complication. When there is failure of the normal hypertrophy of the gland during pregnancy, and when there is a diseased thyroid, as in exophthalmic goiter, the administration of thyroid substance, by supplying the deficiency of the normal thyroid secretion and by diuretic action, may materially improve a faulty metabolism, and thus have a favorable influence on the manifestations of the toxemia of pregnancy. The use of a saline extract of thyroid proteids made from fresh normal human glands is much more efficient in rapidity and reliability of action than the sheep thyroids as ordinarily prepared; therefore much more satisfactory results may be expected from its use. The hypodermic administration of thyroid proteids is greatly superior to oral administration, especially when used in cases of toxic vomiting of pregnancy, or in eclampsia.

44. **Area of Pain and Visceral Disease.**—With the hope of obtaining more accurate knowledge of the location of pain complained of by patients afflicted with disease of the abdominal and pelvic viscera. Harris has for some time required that nurses mark the skin in such a manner as to show all localities of pain. He employs characters to indicate pains, pain area centers and directions of radiation. The first of these characters consists of a continuous or unbroken line; the second of a broken line or a dash; the third of a dot; and the fourth of a dash and a dot. Beginning with the fifth localization of pain Arabic numerals are employed for the purpose of successive enumeration and identification of all centers of pain.

46. **Cancer Mortality.**—Mortality statistics reviewed by McGlinn show that, while there was a general decrease in mortality from all causes of 1.8 per 1,000 population during the period between 1890 and 1900, cancer not only did not decrease, but showed an actual increase of 12 per 100,000 population during this period. It is frequently stated that this increase is only apparent and not real, being due to more accurate diagnosis and better registration reports. However, a study of these figures shows that this increase is almost universal, and that the disease shows a proportionate increase in those parts of the body which are readily accessible and in which the diagnosis, on account of its ease, has always been fairly accurate. In the registration area of the United States in 1906 out of a total death rate for males at all ages of 358,286 there were 11,166 who died of cancer, and out of a total of 299,819 for females, 17,854 died of cancer. This showing that one male out of 32 will die of cancer, and one female out of 11.2 will die of cancer. The corresponding phthisis rates being for males one out of 9.9 and for females one out of 10.2. This shows that almost as many women die of cancer as of phthisis.

In the same area for 1906 out of a total death rate of 186,944 for males over 35 years of age, 10,644 died of cancer and out of a total of 156,465 for females over 35 years of age, 16,879 died of cancer. This means that one man in 17.5 over 35 years of age will die of cancer, and one woman in 9.2 over 35 years of age will die of cancer. The corresponding phthisis rates for this age period being for males 1 in 9.9 and for females 1 in 14.1. In other words, more women past the age of 35 die of cancer than of pulmonary tuberculosis. The stomach is the most frequent site of the disease in man, occurring in 43.06 per cent. of all cases. In women the stomach is second in point of frequency, occurring in 24.47 per cent. of cases, while the uterus is first, being the site in 27.68 per cent. of all cases.

Statistics show that more women die of cancer than men, but eliminating cancer of the organs peculiar to sex, actually more men than women die from this disease. The age of greatest frequency in reference to the site of cancer is shown as follows: Abdomen, males 60 to 64, females over 50; bladder, males 60 to 70, females 50 to 60; brain, equally over 20 for both males and females (the number of cases is so small that the statistics are valueless); breast, males equally over

40, females equally over 45; eye, males and females equally over 20 (number of cases very small); genitals, males 60 to 75, females 60 to 64; head, face, and neck, males and females equally over 75; kidney, males 45 to 49 and over 75, females 55 to 59; larynx, males 60 to 70, females very rare; liver, males 60 to 70, females 55 to 65; lower extremity, males and females equally after 40; lungs, males 50 to 54, females 50 to 65; mouth, tongue, and throat, males 55 to 59, females 65 to 69; ovaries, 45 to 60; penis, after 40; rectum, males after 55, females 55 to 59; stomach, males 55 to 69, females 60 to 64; testicle, after 20; upper extremity, males after 20, females after 40; uterus, 45 to 49.

52. **Elastic Rubber Bands for Drainage.**—Ryerson uses the ordinary elastic band for carrying out the principles of drainage. It was first applied in all cases in which drainage was required, with the exception of those cases in which a tube was still considered advisable. From the test cases it was learned that the discharge was taken up into the dressing, practically none of it being dammed back into the cavity as the result of drying around the mouth. The discharge was found to run up between the approximated surfaces of the two layers of rubber as well as between the outer surface of the band and the surrounding wall of the sinus. As the approximated surfaces of the bands were always moist with discharge and the cavity emptied of its contents it was considered that capillary action was the force which was responsible for the drainage of the wounds. Among the advantages of the bands that were noted, were the ease of introduction, the absence of pain, and the efficient way in which they carried out the drainage. The flexibility of the bands also allows the cavity to collapse and in this way hastens the healing process. On account of the flatness of the band and the small amount of granulation tissue that forms in a collapsed cavity, the resulting scar with its subsequent contraction will be small. The conditions in which Ryerson considers that rubber bands will carry out drainage satisfactorily are abscess cavities, acute and chronic sinuses, operation wounds of medium size in which bloody oozing is expected, e. g., thyroidectomy, or in which the wound is expected to become septic.

Vermont Medical Monthly, Burlington

November

57 Clinical Relationship of Ophthalmology to General Medicine and General Surgery. J. H. Woodward, New York.
58 Sleep—Sleeplessness and Hypnotics. S. W. Hammond, Rutland.
59 The Secondary Work of the Digestive Juices. C. F. Dalton, Burlington.
60 The Individual Assuming Personal Care. J. W. Watson, So. Braintree, Mass.

Journal of Ophthalmology and Oto-Laryngology, Chicago

November

61 *"Trachoma Bodies" possibly the Etiologic Factor of Trachoma. B. Pusey, Chicago.
62 Surgical Correction of Deformities of the Nasal Septum. E. Pynchon, Chicago.

61. Published in the *Bulletin of the Northwestern Medical School*, June, 1909. The important points of this article were covered in an article on this subject published in THE JOURNAL, July 3, 1909, p. 28.

Pennsylvania Medical Journal, Athens

November

63 *Present Status of Cancer Research. L. Loeb, Philadelphia.
64 *Differential Diagnosis of Gall-Stones, Ulcer and Cancer of the Stomach. C. Graham, Rochester, Minn.
65 *Prevalence of Cancer. S. G. Dixon, Philadelphia.
66 Early Diagnosis of Cancer of the Breast and Best Operative Technic. W. L. Rodman, Philadelphia.
67 *Cancer of the Mouth and Lip. E. Laplace, Philadelphia.
68 *Early Diagnosis and Best Treatment of Cancer of the Rectum. R. W. Stewart, Pittsburg.
69 *Early Diagnosis of Cancer of the Uterus; Operative Technic. T. S. Cullen, Baltimore.
70 Education of the Public Concerning Cancer of Uterus. J. G. Clark, Philadelphia.
71 Place of the *X*-Ray in the Treatment of Cancer. J. C. Price, Scranton.
72 *The *X*-Ray in Relation to Carcinoma of the Breast. W. S. Newcomet, Philadelphia.
73 Cerebrospinal Syphilis: Five Cases with Necropsy. S. D. Ingham, Philadelphia.
74 *Indications for Antisyphilitic Treatment of Tabes Dorsalis. J. H. W. Rhein, Philadelphia.
75 Advantage to Physician and Pharmacist in the Use of U. S. P. and N. F. Preparations. W. P. Kirk, Monessen.

63. **Present Status of Cancer Research.**—Loeb says that whether or not cancer is a parasitic disease can neither be affirmed nor absolutely denied at present, but he believes that, on the whole, the increase in knowledge in recent years has not tended in the direction of the parasitic hypothesis. Only systematic breeding experiments in animals, such as those carried out at present by Tyzzer, can definitely decide what part hereditary factors play in the pathogenesis of cancer. If no fact known so far necessitates the assumption of microorganisms as the cause of cancer, nevertheless their presence as intracellular parasites would explain the apparently endless proliferation of the cancerous cells. There can be no doubt that various non-specific physical or chemical stimuli are among the best established factors in the pathogenesis of cancer. Experiments prove how important the study of animal tumors has been and will be still more so in the future for the analysis of cell and tissue growth in general. At present, the principal weapon in the struggle against cancer still consists in thorough extirpation of the tumor. Certain experiences in tumor inoculation prove that the liability to the formation of local metastases may differ even in tumors of the same histologic structure. It will be necessary, therefore, to avoid carefully any contact between the tumor and the surrounding tissues during the operation. Inasmuch as mechanical injury to a tumor may lead, in certain cases, to an increased energy of growth, it seems to Loeb that whenever possible an exploratory incision ought to be followed at once by radical removal of the tumor. It will be necessary to use all means to secure an early diagnosis and an early operation.

64. **Differential Diagnosis of Gall-stones.**—Graham says that in gall-stones the general health does not suffer until complications are present. The course of ulcer is prolonged and fluctuating; in cancer it is short and steadily downward. Pain in gall-stones is irregular in time, of sudden onset, and of severe but short duration, abrupt cessation, radiates to right arch and back and is independent of food. In ulcer, pain is usually clear cut, in spells, regular in time, and eased by food to reappear in from two to four hours. In cancer, the pain is continuous, dull, depressing and not only is not controlled by food, etc., but is immediately increased by it. In gall-stones the vomiting is less a factor in diagnosis. In ulcer it is as regular as is pain. It is irregular in cancer. In gall-stones gas is troublesome only at the time of the colic. In ulcer it is a symptom at a time when other symptoms are present and is controlled in the same manner as the other symptoms are controlled. In cancer, gas is continuous and increased in amount, with periods of great increase usually soon following the ingestion of food. Blood is rare in gall-stones; in ulcer quite rare; in cancer common. In gall-stones the patient is normal physically, save when there are late complications with pancreatic disturbance. In ulcer, the patient is hopeful and active; in cancer, depressed, languid, weakened, discouraged, pale, and, perhaps, cachectic. Diagnosis of gall-stones is made with considerable satisfaction; that of peptic ulcer is, perhaps, less clearly defined. Diagnosis of cancer of the stomach is extremely difficult to make in that early stage when surgery, the only means of relief, offers a hope of cure, and when delay is fatal. Though late in his diagnosis, either because of insuperable circumstances, lack of knowledge or unpardonable neglect, the internist has met his responsibility, at least in a small measure, when he places his patient with gall-stones, ulcer, or suspected gastric cancer in the hands of a competent surgeon. The surgeon's responsibility, however, does not cease with exploration or gastroenterostomy alone, because careful resection is necessary in cancer or any suspicious ulcerous lesions.

65. **Prevalence of Cancer.**—Dixon says that so far as statistics are concerned, the term cancer may be considered as including "cancer" and other "malignant tumors," and excluding all tumors which are not definitely stated to be of a malignant nature. In the Bureau of Vital Statistics in the Pennsylvania State Department of Health, it is necessary to ask each month not less than twenty-five physicians throughout the state for a more definite statement, even as to the location of cancers and malignant growths. Material aid in the study of cancer is thus withheld.

67. **Cancer of Mouth and Lip.**—Laplace claims that cancer of the mouth and tongue is especially destructive to life because of the ease of infection from the lymphatics and the excessive virulence of the disease in that locality. A clinical differential diagnosis should be accompanied by laboratory tests for early diagnosis. The ocular or cutaneous tuberculin test may eliminate tuberculosis, the Wassermann reaction will eliminate syphilis, whereas the Crile blood test may finally determine the cancerous diathesis. A radical operation should then be performed. Removal of a specimen for microscopic examination is always risky for fear of spreading the disease. The parts should be cauterized thoroughly with the thermocautery after an operation and allowed to heal by granulation or a secondary suture performed. *X*-ray or radium treatment is of doubtful value in the mouth. Early diagnosis and early complete removal must remain the treatment at present. All tentative cauterizations must be avoided and the patient submitted at once to a radical operation, remembering that warts, moles, etc., may be considered as potential cancers.

68. **Cancer of Rectum.**—Inasmuch as acute inflammatory conditions producing perirectal infiltration, tuberculosis and syphilis or benign neoplasms are the conditions usually mistaken for cancer of the rectum, Stewart thinks it probable that the cures following colostomy have really been for one of the above conditions. Cancer of the rectum is not necessarily a disease of middle or advanced life; it may occur in early adult life. The slowness with which the growth involves the surrounding structures emphasizes the value of early radical excision. From the patient's standpoint, good surgical judgment is of far more importance than great operative skill, as he may be injured by an excision, no matter how skilfully performed, if the growth has clearly extended beyond operative limits, as his suffering could have been as effectively relieved by a simple colostomy. In the majority of cases, the operation to be recommended for the removal of the cancerous growth is the combined abdominal and perineal methods, by which the entire rectum is excised, including the lymphatic-bearing area behind the rectum. This operation should not be undertaken except by an experienced abdominal surgeon. Unfortunately it is applicable only in the minority of cases; much, however, may be done in the worst cases by inguinal colostomy.

69. **Cancer of Uterus.**—Cullen asserts that any bloody or watery vaginal discharge that cannot be definitely accounted for demands an immediate and careful local examination. When the physician cannot decide whether or not malignancy exists, a specimen should be sent to the pathologist. Extra-uterine pregnancy frequently gives rise to intermenstrual bleeding and occasionally to a slight menstrual discharge, but there is usually a history of a missed period or of a period that has persisted, and localized pain. Pelvic inflammatory conditions are sometimes accompanied by a bloody or watery discharge, but in these cases a recent local vaginal infection or an old pelvic lesion may account for the condition. Here, too, there is rise of temperature, whereas in early cancer there is no fever.

72. ***X*-Ray in Carcinoma of the Breast.**—Newcomet says that occasionally one will see some remarkable instances of advanced disease yielding to the *x*-rays. This, however, is not usual, for the best results are to be found by prompt and energetic treatment, and here alone is the only hope of removing the disease. At present, it is difficult to state the actual worth of the *x*-ray immediately after a primary operation as a prophylactic. Years of observation are necessary to reach definite conclusions. In cases showing involvement of the axillary glands early *x*-ray treatment may prove to be of great value. While cases of recurrence are not hopeful, the patients will sometimes recover after vigorous *x*-ray treatment. In unfavorable cases it should be ascertained whether or not the *x*-ray was properly applied, remembering that this is a new agent and one whose application is not thoroughly understood.

74. **Antisyphilitic Treatment of Tabes Dorsalis.**—Rhein advises antisyphilitic treatment in tabes because it is his belief that the antisyphilitic treatment should have a favorable influence on the meningitis which, it is proper to conclude, is present in most of the cases. While such a treatment may not have any direct bearing on the progress of tabes, it certainly cannot but favorably affect the meningitis which in many, if not all, of the cases is syphilitic in origin; and if this meningitis is not the cause of the degeneration in the posterior columns as is claimed by some, and which Rhein believes is doubtful, yet it is conceivable that the presence of such a meningitis cannot but unfavorably influence the progress of the tabetic process. The treatment should not, however, be prosecuted when cachexia, due to chronic liver, kidney, lung or other diseases, is present, and where the administration of the iodids and mercury increases auto-infections of a gastrointestinal type, or where optic atrophy is an early symptom.

Memphis Medical Monthly

November

76 Treatment of Typhoid. B. W. Fontaine, Memphis.
77 Case of Head Injury. B. N. Dunavant, Memphis.
78 Complications of Tympano-Mastoiditis. W. L. Simpson, Memphis.

Interstate Medical Journal, St. Louis

December

79 *Cure of Movable Kidney by Restoring the Standard Weight with a Pure Milk Diet. L. Kolipinski, Washington, D. C.
80 *Outlining of Normal Organs and Diagnosticating of Diseased Conditions of the Pleura and Lungs by Means of Palpation. F. M. Pottenger, Monrovia, Cal.
81 Labor as a Factor in Pelvic Disease. J. E. King, Buffalo.
82 Psychiatry (continued). S. I. Schwab, St. Louis.

79. **Movable Kidney.**—Kolipinski believes that dietetic treatment will cure most cases of movable kidney when emaciation is present. Hence it should be resorted to before any other method of cure or treatment is entertained. The operation of nephrorrhaphy may, he says, be done in the obese, in degenerative floating kidney, and the same with hydronephrosis and when the milk diet has restored the weight, but not the kidney, to normal.

80. Published in the *Lancet-Clinic*, Dec. 11, 1909.

Mississippi Medical Monthly, Vicksburg

December

83 *Causes of Insanity. V. B. Martin, Bogue Chitto.
84 Tapeworms. H. S. Capps, Gulfport.
85 Prognosis in Different Forms of Insanitay. T. E. Hewitt, Bogue Chitto.

83. **Tapeworm.**—The following prescription has given Capps excellent results:

R.	gm. or c.c.		
Oleoresin aspidii	8		3ij
Chloroformi	4	or	3j
Olii tiglii	13		gtt. j
Glycerinæ	60		q. s., 3ij

M. Sig.: To be taken in 2 doses at interval of an hour.

Capps generally directs his patients to fast for one or two days before taking the medicine; only a little milk or toast is allowed. On the day previous to administering the anthelmintic, a saline cathartic and an enema are given to clear the bowels. The next morning give the above prescription and follow within two or three hours with another saline. This generally succeeds in bringing away the worm. As the treatment is very weakening, however, follow it up with a tonic, containing brandy or strychnin. If the head of the worm is not secured, it will continue to form segments which will ripen and be discharged again within about three months. In this case the treatment is to be repeated. If no segments reappear in the stools after five or six months, the patient may be regarded as cured.

Woman's Medical Journal, Cincinnati

November

86 Morphology and Physiology of Areas of Langerhans in Some Vertebrates. L. M. De Witt, Ann Arbor, Mich.
87 Technic of Tonsillectomy and Adenectomy. G. P. Yankauer, New York.
88 Case of Hydatiform Mole. J. K. Qua, Amsterdam, N. Y.
89 Evolution of Asepsis. E. L. Call, Boston.

St. Paul Medical Journal

December

90 *Epidemic Paralysis. C. R. Ball, St. Paul.
91 *Infantile Paralysis. H. Davis, St. Paul.
92 Present Status of the Serotherapy of Puerperal Septic Infection. J. L. Rothrock, St. Paul.

90. **Epidemic Paralysis.**—Anterior poliomyelitis, as seen in epidemic form, according to Ball, presents so many different types that the names, "The New Disease" and "Epidemic Paralysis," do not seem inappropriate. The so-called abortive type in Ball's opinion simply means a case in which the nervous system has not been overcome by the toxin. Notable points are: 1. The usually free sensorium even in the fatal cases in contradistinction to the mental confusion and stupor in ordinary meningitis. 2. The method of death in the fatal cases by paralysis of the respiration. 3. The transient character of the paralysis, in some cases lasting from a few hours to several days, and then completely disappearing. 4. The sensitiveness of the nerves to pressure in the majority of cases before the development of the paralysis. 5. Rest in all cases from the very beginning and the possibility of preventing the occurrence of the paralysis in some cases by this measure.

91. **Infantile Paralysis.**—According to Davis, the treatment is not satisfactory. He cleans out the intestinal canal with calomel, and then uses salicylates, ergot and ice to the posterior cervical region. After the acute stage is over, he gives iodid of potassium and strychnin. In one case of respiratory paralysis he lowered the head, thereby flooding the upper spinal region and brain with blood, immediately relieving the distressing symptoms for half an hour, and then there was a return of the trouble, and death.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

November

93 Achylia Gastrica. A. L. Benedict, Buffalo, N. Y.
94 Dementia Præcox Caused by Dental Impaction. H. S. Upson, Cleveland.
95 Cataract. C. A. Oliver, Philadelphia.
96 Problem of Efficient Nursing for Persons of Moderate Means. W. O. Stillman, Albany, N. Y.
97 The Adrenals in Sudden Death (concluded). C. E. de M. Sajous, Philadelphia.
98 Influenza. J. V. Shoemaker, Philadelphia.
99 Infantile Gonorrheal Vulvovaginitis. Aphthous Stomatitis. W. C. Hollopeter, Philadelphia.
100 Light Energy in Treatment of Disease. J. F. Wallis, Norristown, Pa.
101 Medical and Surgical Testimonies on the Mummy Grove Potteries of old Peru. A. S. Ashmead, Philadelphia.

Journal Indiana State Medical Association, Fort Wayne

November

102 *Consideration of the Prophylaxis and Treatment of Cicatricial Rectal Stricture. A. B. Graham, Indianapolis.
103 Melanuria: Report of a Case. B. W. Rhamy, Fort Wayne
104 Sketches of the Medical History of Indiana (continued). G. W. H. Kemper, Muncie.
105 *Neglected Appendicitis. B. Van Sweringen, Fort Wayne.
106 Influenza—Its Complications and Treatment. B. W. Egan, Carrol.
107 Sporadic Cretinism; Results of Thyroid Feeding. E. Charles, Summitville.
108 Mechanical Assistant for the More Correct Adjustment of Colles' and Pott's Fractures. N. W. Cady, Logansport, Ind.
109 *The Appendotome. S. J. Young, Valparaiso.
110 Acute Endocarditis. W. F. Fankboner, Marion.
111 Status Lymphaticus. A. Kern, Wabash.
112 *Iliohypogastric Hyperesthesia. M. A. Austin, Anderson.

102. **Cicatricial Rectal Stricture.**—While the surgical measures employed in the treatment of cicatricial rectal stricture, excision, complete posterior proctotomy, colostomy and gradual dilatation have their fields of usefulness, Graham emphasizes the fact that no one of these surgical measures is applicable to every case; each must be studied carefully, and the operation of choice should be the one best suited to the existing conditions. Prophylaxis implies a careful rectal examination; a careful rectal examination implies an early diagnosis; an early diagnosis implies correct treatment, and correct treatment includes the prevention of a stricture.

When cicatricial rectal stricture is diagnosed, surgical intervention is indicated. In cases where there is no danger of infection, excision should be the choice of all surgical measures at our command. If successful, its results are ideal because it effects a cure by the complete removal of the stricture. In cases in which it is not safe to practice the excision method (and there are many such cases), complete posterior proctotomy or colostomy, either alone or combined, should be performed. Gradual dilatation should be employed only in cases of small annular stricture. In such cases it is possible that a symptomatic cure can be effected by this surgical measure. The excision method, he says, needs no defense, as its results are all that could be desired.

105, 112. Abstracted in THE JOURNAL, Oct. 23, 1909, pp. 1422, 1423.

109. **The Appendotome.**—This instrument is a combination of clamp and scissors. After ligation, it clamps, cuts, seals and removes the appendix at one stroke. This is all done with one hand, leaving the other free. It saves time. It prevents leakage from the proximal cut end of the appendix. It locks, automatically, and is removed from the field attached to the severed appendix, thus precluding subsequent use of the instrument in some other part of the operation—a mistake which is possible by other methods. The instrument is simple, easily and quickly taken apart when cleaned, and therefore aseptic.

Louisville Monthly Journal of Medicine and Surgery

December

113 *Medical Treatment of Exophthalmic Goiter. S. P. Beebe, New York.
114 Early Diagnosis of Gall-Stone Disease. J. E. Cannaday, Charleston, W. Va.
115 Acute Pancreatitis, due to Retroinjection of Bile. L. Frank, Louisville.
116 *Burns. A. H. Barkley, Lexington.

113. Abstracted in THE JOURNAL, Nov. 13, 1909, p. 1675.

116. Abstracted in THE JOURNAL, Nov. 20, 1909, p. 1709; also published in the *Virginia Medical Semi-Monthly*, Nov. 26, 1909.

Albany Medical Annals

December

117 The Exaggerated Fear of the Hospital and Operations. A. H. Traver, Albany.
118 The Alcoholic Psychoses. C. G. McGaffin, Taunton, Mass.
119 *Retrodisplacements of the Uterus. J. B. Harvie, Troy, N. Y.
120 Tuberculosis Dispensary work in Albany. A. T. Laird, Albany.

119. **Retrodisplacements of the Uterus.**—In Harvie's experience the Alexander operation has not been associated with complications during gestation except some discomfort referred to the inguinal region. Labor has not been complicated and the process of involution has been prompt and satisfactory. He has never seen a case presenting unusual complications following ventral suspension. The success of a ventral suspension necessitates the closest calculation to secure an easy resting place for the uterus so that the least strain will be obviated on its attachment. If the suture should be applied too far forward on the fundus so that the ligature is called on to sustain the weight of the uterus, it will be a matter of a very short time when it will break away from its moorings or the peritoneal ligament which is formed in those cases will become so stretched out that the uterus will be permitted to drop back in its former position. The moment the peritoneal ligament is called on to sustain the weight of the organ it soon ceases to be of any use, but so long as it performs its functions by acting as a stay just so long will it continue to hold the uterus in anteversion.

Intraabdominal shortening of the round ligaments, as recommended by Mann, Wylie and others, has not proved satisfactory in Harvie's work. He has done this operation a few times, and has, in addition, supplemented it by placing a purse-string suture low down in the broad ligament. This seemed to maintain the uterus fairly well in a forward position, and Harvie sees no objection to the proceeding, but is unable to speak of its permanency inasmuch as the operations have been done too recently. One of the women operated on is now pregnant for the first time and so far has expressed very little discomfort. He believes, however, that the feeble attachment of the round ligaments in the inguinal canal would argue against their standing any prolonged strain and this has perhaps accounted for the reported failures of the Wylie and Mann operations.

Texas State Journal of Medicine, Fort Worth

December

121 Practical Applications of New Tests of the Semicircular Canals. M. E. Taber, Dallas.
122 Five Cases of Hypernephroma. J. J. Terrill, Galveston.
123 Importance of Teaching Oral Hygiene in the Public Schools. L. P. Robertson, Marlin.
124 Medical Ethics. J. W. Largent, McKinney.
125 Mineral Wells: Its Climatology and the Therapeutic Value of its Waters. J. H. Eastland, Mineral Wells.
126 Symptom Grouping in Typhoid. R. L. Kimmins, Iredell.
127 Diagnosis and Treatment of Typhoid. J. Greenwood, Galveston.
128 Local Anesthesia in General Surgery. L. F. Watson, Oklahoma City, Okla.
129 Diagnosis and Surgical Treatment of Diseases of the Upper Abdominal Cavity. W. W. Grant, Denver, Colo.

Buffalo Medical Journal

December

130 Our Family's Solution of the Milk Problem. W. S. Bull, Buffalo.
131 Headaches and their Treatment. G. Rankin, Buffalo.

Progressive Medicine, Philadelphia

December

132 Diseases of the Digestive Tract and Allied Organs, the Liver and Pancreas. D. L. Edsall, Philadelphia.
133 Diseases of the Kidneys. J. R. Bradford, London.
134 Surgery of the Extremities, Tumors, Surgery of Joints, Shock, Anesthesia, and Infections. J. C. Bloodgood, Baltimore.
135 Genitourinary Diseases. W. T. Belfield, Chicago.
136 Practical Therapeutic Referendum. H. R. M. Landis, Philadelphia.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

Lancet, London

December 11

1 Acute Overstraining of the Heart. Professor Schott.
2 *Functional Disorders of the Colon. E. W. H. Groves.
3 *The Rôle of Fats in the Treatment of Disorders of the Stomach. F. C. Moore and R. L. Ferguson.
4 Relationship between Avian and Human Tuberculosis. S. G. Shattock and L. S. Dudgeon.
5 Use of Radium for Local Application within the Body. A. C. Jordan.

2. Functional Disorders of the Colon.—Groves describes all conditions of the colon which are associated with marked constipation without the occurrence of any gross disease. He includes, on the one hand, the extreme cases of idiopathic dilatation of the colon, most of which are congenital; and, on the other, those cases of chronic constipation which are probably due to a sluggish action of the large intestine. For details the original article must be consulted.

3. Fats in the Treatment of Stomach Disorders.—In 62 cases in which there were subjective manifestations of gastric disorder, either with or without indications of organic disease of the stomach, the effect of the administration of oil of sweet almonds on the secretory activity of the stomach was determined by Moore and Ferguson. On consecutive days a plain test breakfast and a test breakfast preceded 30 minutes by one ounce of almond oil was given, and in the stomach contents the free HCl and the total acidity were estimated; in certain cases the digestive power of the stomach contents (peptic and tryptic) was also determined by the method of Mett. The stomach contents after the oil breakfast separated on standing into three layers—oil on the surface, the fluid contents with its granular sediment below, and between the two a narrow layer of emulsified oil, and but for the presence of the oil the contents were similar in appearance to those after the control meal; in no instance was there any evidence of the presence of bile pigments or of variations in the mucous content, and the quantity varied quite irregularly, being in some greater, in others less than in the control.

The results of the analyses expressed in averages where a series of observations were made on any one case, show without exception that the administration of oil is associated with a marked reduction in the acid values, free HCl and total acidity, of the stomach contents. Although it is well recognized that in any individual, normal or otherwise, the acid values of the stomach contents, removed at a definite time after a meal of constant composition, vary within somewhat wide limits, yet the constancy with which they are diminished after the exhibition of oil in so large a number of cases precludes the possibility of coincidence.

Clinically, the administration of fats, such as cream, butter, almond oil, in conditions in which hyperacidity of the stomach contents has been found to exist, has shown this action of fats to be associated with a very definite amelioration of the subjective manifestations of the condition. In simple forms of hyperacidity depending on slight degrees of digestive hypersecretion (the so-called hyperchlorhydria of Riegel), the addition of cream and butter in abundance to the diet, with a diminution of the starches, will often suffice to remove the subjective manifestations. It is only in the severe types, and particularly of the severe degrees of digestive or continuous hypersecretion so commonly associated with chronic ulcer about the pylorus or duodenum, in which heart-burn, acid pyrosis, the sudden gnawing pain in the epigastrium ascribed to pyloric spasm, and the vomiting of acid fluid, that the administration of almond oil is undertaken, and then in doses of one ounce first thing in the morning and repeated before subsequent meals if necessary. This method has proved of value not only in alleviating the symptoms which follow the digestion of food in the stomach, but also in contributing very considerably to the nutrition of the patient, and is certainly preferable to the sole use of alkalies for the purpose of neutralizing the hyperacid stomach contents, and so obtaining relief from the symptoms. In no case have they found that oil so administered has been badly tolerated or in any way proved objectionable.

British Medical Journal, London

December 11

6 Mistakes in Diagnosis and their Avoidance. R. P. Rowlands.
7 *Physical Signs of Incipient Pulmonary Tuberculosis. D. B. Lees.
8 *Severe Persistent Hemoptysis. T. W. Dewar.
9 The Dietetic Theories of America. A. Bryce.
10 *Treatment of Chlorosis. C. H. Melland.
11 Tetanus Treated with Carbolic Injections: Recovery. E. M. Phillips.
12 Congenital Blennorrhea of the Lachrymal Sac. J. Foster.
13 Perforating Wound of the Eye: Operation: Recovery. C. Killick.
14 Chronic Disease of the Colliculus Seminalis. A. Edwards.
15 Use of Pure Animal Wool in Medical and Surgical Work. N. Porritt.

7. Physical Signs of Incipient Pulmonary Tuberculosis.—During the last four years Lees has treated all his cases of early pulmonary tuberculosis by inhalation of antiseptics with remarkable results. The inhaler employed has been the simple oro-nasal cage of perforated zinc advocated by Yeo. It is worn over the nose and mouth and is kept in place by elastic bands behind the ears; it contains a piece of sponge or felt on which the solution is dropped. The only precaution necessary is to take care that the edges of the inhaler which rest on the skin are not wetted, lest the skin should be stained or made sore. The antiseptic solution employed has been:

R.	gm. or c.c.		
Acidi carbolici	8		3ij
Creosoti	8		3ij
Tinct. iodi	4	or	3j
Spir. ætheris	4		3j
Spir. chloroformi	8		3ij

Of this solution, 6 to 8 drops are poured on the felt of the inhaler every hour during the daytime, and two or three times during the night, if the patient is awake. The odor of the solution is not unpleasant, and patients appear to derive great benefit from its use. Cough is readily relieved without any sedative or expectorant medicines, and sputum, if any, is more easily expectorated, and is lessened in quantity. The use of this solution has no irritating tendency, nor does it cause hemoptysis. If hemorrhage should occur, it might be well to remember Yeo's suggestion and add turpentine to the solution.

The absolutely continuous use of the inhaler (except at meal-time) must be rigidly required, and it is very desirable to keep the patient at rest in bed for a week at least, the windows of his bedroom being widely open. During the second week he may be allowed to rise for an hour or two daily, but the continuous use of the inhaler is essential. When the temperature is normal, after the first ten days or so, he may be allowed to omit the inhaler for an hour every morning and take a walk in the open air. Gradually the periods of exercise may be increased and the number of hours during which the inhaler is used may be very gradually diminished.

8. **Severe Persistent Hemoptysis.**—Dewar checked the bleeding by intravenous injection of 10 c.c. of normal serum by the mouth, three times a day, all other means of treatment having proved futile.

10. **Treatment of Chlorosis.**—Melland emphasizes the importance of elimination of water by the bowel, by the kidney, or by the skin, but the intake of water must be limited at the same time, and he recommends taking as little salt with the food as possible. It has struck him as a possible explanation of the origin of chlorosis, which is still wrapped in mystery, that the kidneys might be functionally incapable of secreting urine containing more than a certain proportion of salts, such as is well-known to be the case in chronic interstitial nephritis, with resulting retention of salts and retention of fluids to keep the salts in solution.

Medical Press and Circular, London

November 2½

16 Examination of the Person. F. J. Smith.
17 Study and Treatment of Acute Peritonitis (continued). Professor Federmann.
18 The Teaching of Practical Midwifery in the Past, and at the Present Time. H. Jellett.
19 Relations of Physic to Physics, and their Bearing on Therapeutics. W. G. Smith.

Clinical Journal, London

November 2½

20 Difficulties and Dangers Met with in Connection with Uterine Fibroids. T. G. Stevens.
21 Stricture of Intestine. F. J. Steward.
22 Routine Treatment of Recent Syphilis. H. Oppenheimer.

Journal of Tropical Medicine and Hygiene, London

December 1

23 Peripheral Neuritis of Malarial Origin. G. H. Fink.
24 Bilharziosis of the Penis. F. C. Madden.
25 Spirillum Found in Cases of Relapsing Fever in the Sudan. J. B. Christopherson.

Indian Medical Gazette, Calcutta

November

26 Indications and Technic of Transfusion in Cholera: Cholera in Europeans in Calcutta. L. Rogers.
27 One Hundred Consecutive Cases Operated on under Spinal Analgesia. H. B. Melville.
28 Litholapaxy in Young Children: Suggestions for a Modified Evacuating Apparatus. A. Lankester.
29 Experiences with the Lactic Acid Bacillus. J. R. Roberts.

Intercolonial Medical Journal of Australasia, Melbourne

October

30 Hernia in Infants. R. H. Russell.
31 *Trephining for Double Optic Neuritis. J. W. Barrett and W. F. Orr.
32 Traumatic Pulsating Exophthalmos. J. W. Barrett and W. F. Orr.
33 Clinical Chemistry of the Urine. A. H. Rothera.

31. **Trephining for Double Optic Neuritis.**—The patient complained of headache, had been feeling out of sorts for some time, and had suffered from slight giddiness on stooping. About Christmas time she suffered from nausea but actually vomited for the first time on New Year's day. The vomiting came on suddenly and recurred frequently, sometimes immediately after food, sometimes two hours after food. She suffered from increasing headaches. The pain was not localized, but affected the whole of the head. Subsequently, objects seemed to turn around and she saw double. She then found that she was losing control over the right hand in playing the piano. Listlessness and weakness developed to such an extent that sitting up was troublesome. There was no history of any previous illness, beyond an injury to the back of the head some years since, which apparently did not leave any after-effects, and was due to a fall.

When examined first, the vision was, right eye, 6/24; left eye, 6/24. Fundus, media and fields were normal, but there was marked rotatory nystagmus in both eyes, which probably accounted for the defective vision. She had difficulty in walking, and had little control over her legs. She complained that when she stood up, objects seemed to be moving round in a direction reverse to that of the hands of a clock. While unable to stand firmly, she did not tend to fall in any particular direction. She complained in a general way of pain behind and below the right ear. Knee jerks were active right and left. Urine normal. The right side of the face and the fore part of the head was markedly anesthetic, and there was anesthesia of the left leg from the knee downward. There was also anesthesia on the right side of the tongue. She was put to bed and treated with small doses of mercury and iodids. The rest in bed was at first followed by some amelioration of the general symptoms, but was soon followed by the development of violent optic neuritis on both sides, commencing first on the left side, but becoming more marked on the right.

In the course of four or five days, the elevation of the discs became considerable, amounting to between two and three diopters, and the other symptoms intensified. She was then trephined on the right side below the tentorium, and midway between the ear and the occipital protuberance. The dura mater bulged; there was little pulsation. On the opening of the dura mater, there was little escape of cerebrospinal fluid, but very marked protrusion of the brain. A trochar was introduced in various directions, and forward and in the midline, in the direction of the superior cerebral peduncles, it was thought that there could be detected material of different consistency. It was conjectured that there was a new growth in this position, but its removal was considered inadvisable. A few days after operation, considerable escape of cerebrospinal fluid occurred through the wound, and continued for some time. The headache lessened and general condition improved. The rotatory nystagmus was much less, and the neuritis was perhaps a little less intense. Pupils reacted to light and accommodation. During the next fortnight, the patient lost ground and appeared to be almost moribund. There were occasional clonic spasms throughout the entire body associated with collapse and partial loss of consciousness. The temperature rose to 103 F., and vomiting was frequent. At the request of the father of the patient, radium was applied to the wound.

From this time, steady improvement took place. What the lesion may have been in this case, it is idle to speculate. It is sufficient to note that the effectual decompression of the brain stopped the optic neuritis, restored vision, and has, at all events for the time being, put an end to the imminent danger to life. It is improbable from the subsequent history that there will be any further trouble.

The Dublin Journal of Medical Science

November

34 Aims of Anatomy. A. C. Geddes.
35 Hematemesis and its Surgical Treatment. W. Taylor.

Archives Générales de Médecine, Paris

October, LXXXIX, No. 10, pp. 741-804

36 Deep Pitting Following Subcutaneous Injections of Quinin in the Obese. (Theorie adipogénétique des eschares produites par les injections sous-cutanées de quinine.) F. Gorriti.
37 Psychic Disturbances in Insular Sclerosis. (Troubles psychiques dans la sclérose en plaques.) Euzière.
38 Pleurisy with Effusion of the Apex. (La pleurite exsudative du sommet.) B. F. Marcou.

Lyon Chirurgical, Lyons

November 1, II, No. 6, pp. 651-762

39 Diversion of Fecal Matters in Treatment of Cancer of the Rectum. (Etude critique de la dérivation préalable, temporaire ou definitive, des matières dans le traitement chirurgical du cancer du rectum.) L. Bérard and A. Chalier.
40 Treament of Foreign Bodies in Air Passages. (Le traitement des corps étrangers des voies respiratoires.) Sargnon and Barlatier.
41 Anatomy and Physiology of the Foot. (Variations sur l'anatomie et la physiologie du pied.) E. Destot. Commenced in No. 5.
42 Hernia in Front of and Behind the Uterus as Factor in Prolapse. (Les hernies pré et rétro-utérines dans la constitution des prolapsus.) H. Violet. Commenced in No. 5.
43 Conservative Treatment of Sarcoma of Long Bones. (Etude du traitement conservateur dans les sarcomes présumés malins des os longs.) M. Gangolphe.

Obstétrique, Paris

October, II, N. S., No. 10, pp. 693-796

44 Structure and Development of the Uterus Muscle. E. Retterer and A. Lillièvre.
45 *Contracted Pelvis and Childbirth. (L'accouchement dans les bassins rétrécis.) E. Pestalozza.
46 Successful Vaginal Cesarean Section in 9 Cases of Eclampsia. (A propos de la dilatation rapide du col et de la césarienne vaginale.) E. Essen-Möller.

45. **Delivery with Contracted Pelvis.**—This is the third address on this subject which Pestalozza has delivered by request before international medical congresses. He reviews

the progress realized during the years since his first address at Geneva in 1896, regarding Müller's method of measurement by palpation as the most important achievement the years have brought. The only other important advance in the management of contracted pelvis of late, he declares, is the increasing tendency to expectant treatment. This requires, however, that the woman must be under constant supervision, and preferably in an institution where all is prepared for a serious operation if such becomes necessary. In his experience spontaneous delivery occurred on an average in 50 per cent. of all cases in which the true conjugate was between 7.5 and 10 cm. The danger of rupture of the uterus when the woman has passed through a previous pregnancy sets a limit to expectant treatment for pluriparæ. Pubiotomy is contraindicated for primiparæ, at least for those with rigid soft parts. Cesarean section is favored by operating in the Trendelenburg position, drawing the uterus out before opening it, and making a transverse incision in the fundus without previous hemostasis. His mortality in 14 pubiotomies and 7 symphyseotomies has been 19 per cent., while it was only 7 per cent. in 71 Cesarean sections. Excluding the fatalities for which the operation was not responsible in any way, the mortality was only 3 per cent. in 68 Cesarean sections. The new revival of the old forms of Cesarean section, extraperitoneal, suprasymphyseal, etc., he does not regard as much of an acquisition. There is only one operation that is safe in cases of manifest infection, and that is embryotomy on the living child. In 63 cases of contracted pelvis at the Rome lying-in clinic in his charge last year, spontaneous delivery occurred in 23, in 13 delivery was aided with forceps, in 3 by version, in 5 by induced premature delivery, in 4 by pubiotomy, and in 15 by Cesarean section; perforation was not required in any instance. The clinic has a regular and flourishing outside department for obstetric aid in the home, which has enabled all the women with contracted pelves to be sent in time to the clinic in a practically aseptic condition.

Presse Médicale, Paris

November 17, XVII, No. 92, pp. 817-824

47 Mechanism of Lactation. J. P. Langlois.
48 *Induced Mydriasis as Test for Pupil Reaction. (L'épreuve de la "mydriase provoquée" et l'inégalité pupillaire.) A. Cantonnet.

November 20, No. 93, pp. 825-840

49 *Suprarenal Treatment of Osteomalacia. L. Bernard.
50 *Dangers of Taxis in Hernia. (Réflexions sur le taxis.) P. Hardouin.
51 Serodiagnosis of Echinococcus Disease. (Quelques données pratiques sur le précipito-diagnostic de l'échinococcose.) G. Fleig and M. Lisbonne.
52 The Rôle of the Microbes. G. Barbézieux.

November 24, No. 94, pp. 841-848

53 Moving Pictures of Ultramicroscopic Field. (L'ultramicroscope et la cinématographie.) M. Comandon.

November 27, No. 95, pp. 849-856

54 *Typhobacillosis and Tardy Localizations of Acute Tuberculous Infection in Children. (Typhobacillose de Landouzy.) E. Weill and G. Mouriquand.

December 1, No. 96, pp. 857-864

55 Cyclic Depression and Exaltation. (La cyclothymie.) P. Hartenberg.
56 Roentgen-Ray Examination of Appendix and Stomach. (Diagnostic d'appendicite et radioscopie gastrique.) G. Leven and G. Barret.

48. **Differential Diagnosis with Induced Mydriasis.**—Cantonnet remarks that the loss of the pupil reflex occurs much more frequently than is commonly supposed, as it is not recognized until the reflex contraction of the iris is almost entirely lost; slight impairment of contracting power is overlooked. In order to detect it in its incipiency the eyes should be examined with as little light as possible, illuminating both eyes exactly alike, the accommodation muscles relaxed by having the patient look at some object several yards away. The examination is still further facilitated by instilling into each eye the same small amount of a 4 per cent. solution of cocain. This induces a gradual mydriasis, less marked than that from atropin, and not appearing for from 8 to 15 minutes. Any lack of symmetry in the dilatation of the iris is rendered plainly apparent by this means and slight inequality is magnified to excessive proportions. In 67 tuberculous patients only 3 had a normal pupil reflex, and these were in the earliest stage of the disease; only 4 in 18 patients with exophthalmic goiter, and 8 of 39 patients with organic nervous disease. In 33 of the positive responses to the induced mydriatic test there was nothing to suggest this loss of the pupil reflex before the application of the test.

49. **Adrenalin in Treatment of Osteomalacia.**—Bernard reports a case of non-puerperal osteomalacia in a woman of 36. The first symptoms had been observed at the age of 16 after a nervous shock and were ascribed to a nervous origin until the girl became quite crippled with several spontaneous fractures. Immobilization for a year and a half induced some improvement, but two years later nervous stress and overwork were followed by recurrence and exaggeration of the symptoms of osteomalacia. After two years in bed and failure of all other measures, suprarenal extract was given according to Bossi's technic. By the thirtieth injection great improvement was manifest and in time the entire syndrome was arrested, the bones were apparently restored to approximately normal, all pains ceased and almost complete functional capacity was restored. From eight to ten injections were made each month, in single doses of 1 c.c. Not a trace of injury from the suprarenal treatment has been discovered in this case. He is inclined to ascribe its effect to an influence arresting the decalcification of the bones which he regards as the essential process in osteomalacia, both this and rachitis representing practically the same process, differing only in the age at which it occurs.

50. **Taxis in Hernia.**—Hardouin declares that forcible reduction of a strangulated hernia should never be attempted except when everything is in readiness for an immediate operation. It does not belong in the domain of ordinary medical practice, but it had been applied in all of his 12 cases of gangrene of a strangulated hernia and in all but 3 or 4 of his 70 cases of strangulated hernia in general. Before taxis is attempted the patient must be anesthetized and everything else done to reduce the contraction of the wall preventing the reduction of the hernia. The congestion in the loop of intestine must also be reduced as much as possible and the loop should be reduced spontaneously by traction from its mesentery, never by applying force directly to the hernia. The abdominal wall contracts on account of the pain, and consequently the pain should be abolished by a preliminary injection of 0.01 gm. morphin; the patient should draw up the legs, and a small pillow should be placed under the shoulders to relax the abdominal muscles. To the hernia itself, ice or compresses wrung out from ice water or ether, should be applied, and the buttocks raised, the head and shoulders being lowered. The mass of intestines slides down on the diaphragm and the mesentery under the influence of gravity pulls on the loop strangulated in the hernia, and exactly in the best way to induce its spontaneous reduction. If reduction is in any way possible these measures will accomplish it in two hours at most. If they fail, direct force would not have accomplished more. The patient is then in the best conditions for an immediate operation and there need be no fear of the serious complications liable to follow even the most careful taxis. In one case he applied gentle continuous pressure with his fingers for not longer than five minutes, and found distinct traces of interstitial hemorrhage at each point where the fingers had been applied.

54. **"Typhobacillosis" in Children.**—This term was applied by Landouzy to a general tuberculosis which induces a syndrome suggesting typhoid at first. A number of such cases are described here, with others of tardy localization in the meninges, peritoneum, pleura or lungs. The typhobacillosis in itself seems to be a mild affection if there is no special localization, but the bacilli circulating in the blood generally settle at some point of lesser resistance. In the child more than in adults, Weill remarks, local tuberculous affections are more apt to be preceded by this acute phase of typhobacillosis.

Beiträge zur klinischen Chirurgie, Tübingen

September, LXIV, No. 3, pp. 539-780

57 Fever after Goiter Operations and Traumatic Rupture of a Parenchymatous Goiter. (Zur Frage des Fiebers nach Kropfoperationen.) H. Kolaczek.
58 Mechanism of Twisting Fracture. (Zum Mechanismus der Torsionsfraktur.) H. Zuppinger.

59 Relaxation of Muscles in Extension for Fracture of Leg. (Muskelentspannung bei der Permanentextension der Ober- und Unterschenkelfrakturen.) Id.
60 Sarcoma of Tendon Sheaths. (Zur Kenntnis der Sehnenscheidensarkome.) A. Rosenthal.
61 Plastic Closure of Gap in Ureter. (Plastische Deckung von Ureterdefekten.) H. Flörcken.
62 Pseudoinvagination of Appendix. (Ueber Pseudoinvagination des cystisch veränderten Processus vermiformis.) J. E. Schmidt.
63 Appendix Cysts and Diverticula. Elbe.
64 *Aims and Tasks of Experimental Surgery. (Leistungen und Aufgaben der experimentellen Chirurgie.) H. Klose.
65 Relations of Neurology to Surgery. (Beziehungen der Neurologie zur Chirurgie.) H. Vogt.
66 Pathogenesis and Etiology of Static Coxa Vara. W. Hagen.

64. **Experimental Surgery.**—Klose describes in detail the new institute just completed at Frankfurt for topographic and experimental surgery and allied research, and discusses the ends and aims of such work. He expatiates on the importance of the principle that the conditions in experimental work must be identical in every respect with those of clinical surgery, as otherwise the deductions drawn for man are misleading. He also emphasizes the importance of conducting metabolic research as the invariable accompaniment of surgical research. Neurology, biochemistry, etc., are all indispensable, so that those doing experimental surgical work must have a thorough knowledge of at least the more important branches of medicine, besides being well grounded in the historical, literary and anatomic aspects of the subject, overcoming difficulties with energy and precision technic, and must also be humane and capable of inaugurating and superintending extensive research work.

Berliner klinische Wochenschrift

November 22, XLVI, No. 47, pp. 2089-2132

67 Treatment of Placenta Prævia. J. Veit.
68 Dissecting Aneurisms with Puerperal Eclampsia. C. Wegelin.
69 *Relations between Pregnancy and Diabetes, and Treatment. (Schwangerschaft und Zuckerkrankheit, ihre Wechselbeziehungen und Behandlung.) H. Neumann.
70 Two Cases of Operative Cure of Multiple Cholangitic Liver Abscesses. A. Hochheimer.
71 Influence of Sports on Vital Capacity. W. Frankfurther.
November 29, No. 48, pp. 2133-2176
72 Pathogenesis of Dropsy of Renal Origin. (Zur Pathogenese der Nierenwassersucht.) P. F. Richter.
73 Gastroscopy. (Ein Gastroskop.) H. Elsner.
74 Decline in Mortality from Tuberculosis. (Abnahme der Tuberkulosesterblichkeit. A. Gottstein.
75 Shaking Renders Ferments and Complement Inactive. (Ueber die Inaktivierung der Komplemente durch Schütteln.) M. Jacoby and A. Schütze.
76 Nature of Antitrypsin in the Serum. O. Schwarz.
77 Improved Technic for Graphic Registration of Pulse. (Zur Methodik der Pulsschreibung.) F. Fleischer.
78 Indications and Technic for Vaginal Operations. G. Siefart.
79 High-Frequency Currents in Therapeutics. (Ueber d'Arsonvalisation.) F. Nagelschmidt.

69. **Pregnancy and Diabetes.**—Neumann has encountered 6 cases of diabetes with pregnancy; 4 of the women had inherited the tendency to diabetes and the others were from neurotic families with obesity or syphilis. In 4 the first signs of the diabetes were observed during the pregnancy; another developed the diabetes after emotional stress and the sixth woman showed signs of diabetes a few months after her first and difficult childbirth. Under dietetic measures the pregnancy proceeded in all unmolested to term. The tendency to a malignant course in the young imposes the necessity of forbidding marriage to diabetic girls and protecting diabetic married women against conception. Diabetic women who have become pregnant and pregnant women who have become diabetic must be kept under close supervision and strict dietetic measures, which can be carried out at home. Operative intervention is necessary only when indications demand it without regard to the diabetes.

Centralblatt für die Grenzgebiete der Med. und Chir., Jena

October 30, XII, No. 19, pp. 721-768

80 *Postoperative Parotitis. D. G. Zesas. Commenced in No. 18.
81 *Fibrous Polyserositis and its Surgical Importance. (Morbus Bamberger.) L. Isler.
November 11, No. 20, pp. 769-800
82 Phosphaturia and Its Appearance in Gonorrhea. M. Oppenheim.
November 25, No. 21, pp. 801-848
83 Radiologic Indications for Operative Intervention on the Stomach. (Ueber radiologische Indikationen für operative Eingriffe am Magen.) S. Jonas. Commenced in No. 20.

80. **Postoperative Parotitis.**—Zesas reviews 162 articles or theses on this subject which have accumulated since it was described in 1879. All but 15 per cent. of the cases on record were in women, but the postoperative parotitis may develop after various kinds of operations or even after mere general anesthesia without operation. The trouble is always an inflammatory process in the gland, but in no case on record is there any mention of a focus of inflammation in the vicinity of the gland. The prognosis is generally grave, the mortality in the pure cases was 32.2 per cent., and in those with abscesses 34.44 per cent. Among the complications have been reported hemorrhages, thrombosis, mediastinitis, edema of the glottis and meningitis. The first symptom is generally high fever while the patient feels well and the wound is healing smoothly. This was recorded in 48 of the reported cases; in 5 others there was no change in temperature or pulse. Another constant early symptom is the dryness of the mouth. The parotid gland swells and becomes painful; the left is generally involved, seldom both. This condition lasts for 3 or 4 days, and in 40 per cent. of the cases smooth recovery then followed, while suppuration occurred in the others, and if the pus was not artificially evacuated it found its way toward the skin or into the mouth or auditory passages. As a rule, the parotitis is crossed. Bumm has reported a case of bilateral parotitis after bilateral removal of the ovaries. Some advise early incision, others wait for fluctuation. In case of extensive infiltration only prompt incision can prevent serious trouble. The main point is in prophylaxis; as the infection generally occurs from the mouth, the most careful care of the mouth before and after the operation is required and also care not to press on the jaw and gland while administering the anesthetic. After the operation, frequent cleansing of the mouth and teeth is advisable, a little citric acid being added to the water to stimulate the secretion of saliva.

81. **Polyserositis.**—Isler refers to the fibrous polyserositis first described by Bamberger, and reviews 60 articles on the subject, discussing the various features of the affection. The cases on record showed an acute onset, the abdomen being the scene of the drama; sudden pains generally interpreted as gall-stone colic, with vomiting, chills and depression. These symptoms subside but ascites develops and becomes chronic, or pleuropneumonia may be the first act and the heart may first present symptoms. The liver is generally enlarged and sometimes the spleen; jaundice was noted in the majority, but the recurring ascites is the main feature. The affection may last for from two to twenty-five years with occasional tapping, the general health being not much impaired until the patients succumb to debility from the loss of albumin in the effusions. The affection has an afebrile course, and the trouble is evidently due to toxins circulating in the blood. It has been called variably pericardiac pseudocirrhosis of the liver (Pick), iced liver (Curschmann), hyperplastic cirrhosis of the liver, peritonitis with exudation (Vierordt), fibrous polyserositis (Rose), orromenitis (Galvagni), and perivisceritis (Labadie-Lagrave).

Correspondenz-Blatt für Schweizer Aerzte, Basle

November 1, XXXIX, No. 21, pp. 721-760

84 Treatment of Hyperacidity with Alkalines. (Begründung der Alkalitherapie bei Hyperaciditätszuständen.) M. Hausmann.
November 15, No. 22, pp. 761-800
85 *Torsion of the Omentum. (Ueber Netztorsion.) P. Schönholzer.
86 *Tardy Chloroform Fatality. (Fall von protrahiertem Chloroformtod.) Häberlin.

85. **Torsion of the Omentum.**—Schönholzer has been able to find on record 70 cases of torsion of the omentum in recent literature and reports the details of 2 cases from his own experience. In about two-thirds of the cases the torsion occurred after a part of the omentum had slid down into a hernial sac. In case of adhesions the torsion may be double. In 8 cases the torsion was intra-abdominal, without apparent cause, and without connection with any other organ. One of his cases was of this kind; the patient was a young woman with signs of assumed appendicitis and probable abscess in the right side, but the laparotomy revealed that the omentum had twisted completely around four times and hung from the transverse colon with a corkscrew-like pedicle, the result of

a subacute or chronic unrecognized appendicitis of long duration with chronic inflammation of the omentum, local swelling, pedicle formation and gradual rotation of the resulting bag. If the circulation in the parts becomes impeded there is serious trouble at once. The large and rapidly increasing tumor on the same side as the hernia and the discovery of a hard, tender cord connecting the hernia with the tumor are the main differential features. In 8 of the 70 cases the patients succumbed to peritonitis following an incomplete operation or to postoperative pneumonia, arteriosclerosis or gangrene of the omentum; 2 died of peritonitis without surgical intervention. The omentum must be examined to its base to ensure discovery of any further torsion above. Neglect of this precaution is responsible for more than one fatality. In most of the cases, the severe syndrome has an acute onset but the patients then recall long preceding vague discomfort in the abdomen, generally referred to the hernia.

86. **Tardy Chloroform Fatality.**—Häberlin's patient was a previously healthy man of 25, inclined to abuse of alcohol, who was operated on for mild recurrent appendicitis. About 70 or 80 c.c. chloroform was used in the 25 minutes of the operation. The wound healed smoothly but jaundice developed by the third day and the patient died the sixth day with symptoms of general intoxication affecting the liver, kidneys and heart. The case is analogous in every respect, even to the fat degeneration of these organs, to the dozen cases on record of tardy chloroform death. These cases emphasize, he says, the importance of refraining from too vigorous purgation as liable to leave the blood too concentrated before the anesthetic is administered, and also the importance of ample supply of carbohydrate food to ensure adequate production of glycogen.

Deutsche medizinische Wochenschrift, Berlin

November 18, XXXV, No. 46, pp. 1993-2040

87 Nephritis and Alleged Inflammation of Parenchymatous Organs. H. Ribbert.
88 *Cerebellum Surgery. (Ueber Kleinhirnchirurgie.) O. Hildebrand.
89 *Glycosuria in Women. (Zur Glycosurie bei Frauen mit experimentellen Untersuchungen über ihre Aetiologie.) M. Henkel.
90 *Pubiotomy and Extraperitoneal Cesarean Section. (Heboteotomie und extraperitonealer Kaiserschnitt.) K. Baisch.
91 *Importance of the Momburg Belt Tourniquet for Postpartum Hemorrhage. (Zur Anwendung der Aortenkompression nach Momburg bei einer Blutung in der Nachgeburtsperiode.) B. Kröning.
92 Diagnosis and Treatment of Glaucoma. L. Heine.
93 Imbecility from Clinical and Forensic Standpoint. W. Weygandt.
94 Therapeutic Combinations of Drugs. (Kombination von Arzneimitteln.) G. Treupel.
95 Simplified Opsonic Technic. (Vorschläge zur Vereinfachung der Opsonitertechnik.) C. Hoerder.
96 *The Blood Diagnosis of Lead Poisoning. P. Schmidt.

November 25, No. 47, pp. 2041-2096

97 *Life Expectancy with Albuminuria. (Prognose der Albuminurie mit besonderer Berücksichtigung der Versicherungsmedizin.) M. Fürbringer.
98 Favorable Outlook for Serotherapy of Cholera. (Zur Frage der Serumtherapie der Cholera asiatica.) W. Kolle.
99 Heredity, Selection and Hygiene. (Vererbung, Auslese und Hygiene.) M. Gruber. Commenced in No. 46.
100 Analyses of New Proprietaries. (Neue Arzneimittel, Spezialitäten und Geheimmittel.) F. Zernik.

88. **Cerebellum Surgery.**—In this address read at the recent international medical congress Hildebrand reviews what has been accomplished in this line to date with the points that have proved useful in differentiation and localization of the lesions. He also discusses the technic and the results which differ widely according to the process in question. Conditions are favorable, he asserts, in case of a cerebellar cyst; only one of the 20 patients with this lesion died, although vision was irretrievably lost in a few. The others recovered. Hildebrand successfully removed an echinococcus cyst from the base of the cerebellum near the fourth ventricle, but the patient, a young woman, died a few months later from a similar lesion elsewhere in the brain. Conditions are much less favorable with a tuberculoma; 11 patients out of 20 succumbed soon after the operation and another nine days later. Only 8 patients survived the intervention and recurrences followed in from 2 to 7 months in all but 2 cases; one of these patients was in good health 13 months after the operation. Of the 2 patients with gumma one was cured and the other succumbed to the operation. Conditions are still less favorable with solid tumors in the cerebellum. Only 17 out of the 101 cases on record are reported as definite cures and the ultimate outcome is not known in all. Only in 39 of these cases was the diagnosis confirmed by the operation and 22 patients in this group died. In 62 cases the assumed tumor was not found, but in some of these autopsy or the clinical course later revealed the growth. How many of these cases in which no tumor was found are to be regarded as serous meningitis is still a question but in one case an interval since of four years seems to establish it. Surgical treatment in 30 cases of tumor at the cerebellopontine angle has been reported, with survival of 7 of the patients; in a number the tumor proved inoperable and in only 4 of the surviving 7 could the tumor be removed *in toto*. Injury of the fourth ventricle is the chief danger in removing tumors of this class; infection was the cause of the fatality in very few cases.

89. **Glycosuria in Women.**—Henkel reports a case of myoma and another of ovarian tumor both of which induced glycosuria which vanished after removal of the cause. It is important to differentiate these cases of "intoxication diabetes" from true diabetes, as any expectant or preparatory treatment is useless, the sugar disappearing spontaneously from the urine when the tumor is removed. The proportion of sugar in one of these cases was 3 per cent., the amount of urine was not much increased and there was no abnormal thirst. The findings of acetone or acetic acid are not characteristic as they are sometimes observed in purely gynecologic affections without diabetes. He hesitated before operating, dreading diabetic complications, but the course of the cases showed that the fear of true diabetes was unfounded.

90. **Operative Treatment of Contracted Pelvis.**—Baisch has compiled the statistics from a number of clinics in regard to pubiotomy and extraperitoneal Cesarean section. He states that with Döderlein's subcutaneous pubiotomy there need be no fear of sepsis, hemorrhage or injury of the bladder, but certain infection contraindicates this technic as also a true conjugate of less than 7 cm. and infantile genitalia in a primipara. Pubiotomy must not be preceded by the high forceps or version. He advocates a pelvis-enlarging operation or Cesarean section in institutions in the place of high forceps, prophylactic version or artificial premature delivery. With these principles the mortality of the mothers with contracted pelvis can be reduced below 1 per cent. and of the children below 10 per cent., while the number of spontaneous deliveries approximates 80 per cent.

91. **The Momburg Belt Tourniquet to Arrest Postpartum Hemorrhage.**—Kröning reports a case which has convinced him that this Momburg technic for compression of the aorta will banish the dread of hemorrhage in the third stage of labor for many physicians when they once have become convinced of the feasibility of the method. Its application for postpartum hemorrhage is particularly harmless as it is merely a brief compression while the blood pressure is unusually low, so that the patients can stand the raising of the blood pressure better than under other conditions. When the practitioner has a case of postpartum hemorrhage and must choose between compression of the aorta and introducing his insufficiently disinfected hand into the uterus, the former is by far the least dangerous. Even if the compression fails to arrest the hemorrhage completely, the physician at least gains time to disinfect his hands properly and be ready for skilful tamponing of the uterus. (See illustration, abstract 69 in these columns, Oct. 30, 1909, page 1519.)

96. **The Blood in Lead Poisoning.**—Schmidt has been studying the blood of 110 healthy and anemic persons, having nothing to do with lead, and Trautmann has examined 200. Comparison of the findings with those in 34 cases of certain lead poisoning and in 819 workers with lead has confirmed the fact that the blood picture becomes modified very early in the course of lead poisoning. The change in the blood is the granulation of the red corpuscles, the granules taking the basic stains. The microscope is thus able to reveal lead poisoning in its incipiency. More than 100 granulated red corpuscles per million should be accepted as an index of lead poisoning, the number usually ranging between 300 and 3,000;

in one case of suicide with white of lead 38,000 granulated corpuscles per million were encountered. Other affections with similar findings will seldom be confounded with lead poisoning, malaria, pernicious anemia, leucemia, chronic intestinal hemorrhage and cancer cachexia; malaria alone is liable to mislead in this respect. He has found in experimental research that long after the intake of lead has ceased, lead still circulates in the blood combined with the formed elements, especially the leucocytes. This probably occurs in man, and chemical examination of the blood may be necessary in very important and obscure cases, particularly in forensic testimony.

97. **Prognosis of Albuminuria from the Standpoint of Life Insurance.**—Fürbringer declares that very small proportions of albumin should not be taken into account in relation to life insurance, and consequently he does not regard as of much moment the efforts to produce more and more delicate tests for albuminuria. The so-called physiologic slight albuminuria after excessive exertion, sports, etc., may also be disregarded. The majority of cases of orthostatic albuminuria are also comparatively harmless; it is exceptional for nephritis to develop later in these cases. In examining it is important to note the absence of the higher blood pressure characteristic of contracted kidney, also that the urine is free from albumin during reclining. Another sign indicating the comparative harmlessness of orthostatic albuminuria is the precipitation of euglobin by acetic acid, cold. The more abundant the euglobulin, the better the prognosis. A few tube-casts and corpuscles are no longer regarded as indicating necessarily true nephritis; a predominance of the cylindroids speaks against the latter. He has frequently encountered a condition of slight chronic nephritis without any acute phase, characterized by continuous or intermittent slight albuminuria for years and decades, with occasional tube-casts, sometimes granulated, and corpuscles, but without other signs of actual nephritis and without impairment of the general health. Complete recovery occurred finally in 3 patients in his practice, and he advises their acceptance by the company with an extra premium or the proviso that the contract is void if death occurs from kidney disease. Actual nephritis should exclude the candidate from life insurance and the examiner should not be misled by the periods of latency. Prolonged observation is necessary for the subacute nephritis following an acute infectious disease, as also for pregnancy nephritis. As a rule the latter subsides completely, or it may leave merely the minute patches of contraction which are evidently responsible for the chronic benign form mentioned above; it is exceptional for true pregnancy nephritis to entail actual kidney disease.

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October, CII, Nos. 1-3, pp. 1-300

101 Congenital Hernia of the Brain due to Hydrops of the Ventricle. (Ueber Hirnbrüche.) A. Exner.
102 Nephropexy. R. Lenk.
103 Restoration of the Nose. (Zur Technik der totalen Rhinoplastik.) K. Foramiti.
104 Retrograde Incarceration of the Intestine. (Ueber das Wesen der sogenannten retrograden Inkarzeration des Darmes.) H. Lorenz.
105 Hernia of the Lung. (Lungenhernien.) J. Urbach.
106 Prehistoric Surgical Affections and Operations. K. Jäger.
107 Division of the Scaphoid Bone. (Ueber das Os naviculare bipartitum manus.) O. E. Schulz.
108 Importance of "Concave Torsion" in Treatment of Scoliosis. (Bedeutung der sogenannten Konkavtorsion für die Therapie der Skoliosen.) R. Fibich.
109 Pathologic Cubitus Valgus. F. A. Schwarz.
110 Increased Secretion in Rabbit Intestine after Obstruction. (Experimentelle Untersuchungen über die vermehrte Sekretion des Kaninchendarms beim Darmverschluss.) J. Boese and H. Heyrovsky.
111 Statistics of Sarcoma on the Extremities. (Extremitätensarkome.) G. Piperata.
112 Massive Hemorrhage into the Bed of the Kidney. (Massenblutungen in das Nierenlager.) R. Lenk.
113 Two Cases of Leiomyosarcoma of the Gastrointestinal Tract. M. Richter.
114 What to Do with the Ureter in Nephrectomy for Tuberculosis. (Versorgung des Ureters bei Nephrektomie wegen Tuberkulose.) R. Paschkis.
115 Primary Carcinoma in the Appendix. (Beitrag zu den Irrtümern mikroskopischer Diagnosen.) R. Milner.
116 Ileus from Twofold Intestinal Obstruction. (Ileus infolge zweifachen Darmverschlusses.) Id.
117 Spontaneous Birth as Cause of Shoulder Deformity. (Spontangeburt als Ursache von Schulterdeformitäten.) H. Sellheim.
118 Importance of Wassermann Reaction for Surgical Diagnosis, especially the Stern Modification of the Test. Kreuter and R. Pöhlmann.
119 Hard Tumors of the Jaws. (Ueber Adamantinome insbes. ihre operative Behandlung.) S. Kinoshita.

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November 10, XXVII, No. 31, pp. 1153-1200

120 Clinical and Experimental Research on Atoxyl Poisoning. (Atoxylvergiftung.) G. Kösster.
121 Present Status of Trachoma Research. Wolfrum.
122 Familial Chronic Leucemia. (Familiäres Auftreten der chronischen Leukämie.) F. Brandenberg.

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November 14, V, No. 46, pp. 1727-1766

123 Production of Keratin. (Ueber Verhornung.) P. G. Unna.
124 Serodiagnosis of Syphilis Controlled by Autopsy Findings. (Klinische Beobachtungen über die Wassermann-Neisser-Brucksche Reaktion und deren Kontrolle durch Sektionsresultate.) F. Glaser and G. Wolfsohn.
125 Chronic Organic Affections of the Central Nervous System Following Trauma. F. Schultze.
126 Drugs that Act on the Heart. (Ueber medikamentöse Herztherapie.) Lethaus.
127 Blunders in Diagnosis. (Einige Beispiele von diagnostischen Irrtümern und von seltneren Tumoren.) H. H. Preysing.
128 *Acute Dilatation of the Stomach. (Zur akuten Magendilatation.) H. Hellendall.
129 Antitryptic Action of Urine. (Ueber die antitryptische Wirkung des Harns.) J. Bauer and Z. Reich.

November 21, No. 47, pp. 1767-1802

130 *Epidemic of Acute Poliomyelitis. (Zu der rheinisch-westfälischen Epidemie von spinaler Kinderlähmung.) J. Grober.
131 Action of Antiseptics on Wounds. (Wirkungsweise der sogenannten Wundantiseptika.) K. Büdinger.
132 Importance of Tonsil Region in Relation to Acute Articular Rheumatism and Heart Diseases. (Erkrankung und Behandlung des lymphatischen Schlundrings in ihrer Bedeutung für akuten Gelenkrheumatismus und Herzkrankheiten.) K. Hess.
133 Treatment of Coryza and Influenza with Electric Baths. (Behandlung des Schnupfens und der Influenza mit elektrischen Lichtkastenbädern.) R. May.
134 Treatment of Bromoform Poisoning. (Bromoformvergiftung.) Walldorf.
135 *Test for Estimation of Pepsin. (Eine neue Methode klinischer Pepsinbestimmung.) P. Liebmann.

128. **Acute Postoperative Dilatation of the Stomach.**—Hellendall has collected from the literature 91 cases of postoperative dilatation of the stomach with a cure in 32. The number of cases on record has tripled in the last eight years, while the proportion of cured cases has become much larger. The acute postoperative dilatation results from paralysis of the stomach walls of central or reflex origin, due to injury from the general anesthesia and the operative intervention itself, the dilatation being liable to lead to fatal kinking of the duodenum. The principal sign of it is discovery of pancreatic juice in the vomitus, large proportion of indican in the urine and the bilious character of the vomitus with clay-colored stools. In Schnitzler's case mesenteric incarceration of the duodenum followed acute dilatation of the stomach after a bilateral operation for hernia, and the patient was cured by lying in the ventral decubitus for several hours, without lavage of the stomach. Among the cases reported as cures there were 40 after abdominal operations, 12 with operations on the bile passages, and 21 after gynecologic operations. Fifteen prompt recoveries under this position treatment are on record, but Borchardt's patient died with fulminating exaggeration of the symptoms when the ventral decubitus was assumed. Special caution is necessary after a laparotomy. In Hellendall's first case the patient did not stand the position very well. In his second case the patient recovered under lavage of the stomach alone.

130. **Epidemic Spinal Paralysis.**—Grober discusses the present epidemic of spinal infantile paralysis in Germany calling attention to the way in which the classic syndrome seems to be becoming modified. It now includes cerebral features while the mortality is increasing until it averages 15 per cent. The frequency of gastrointestinal symptoms and lesions early in the disease confirms the assumption that the trouble is a general infection originating in the intestines and passing by way of the blood to localize finally in the brain and spinal cord.

135. **Clinical Estimation of Pepsin.**—Liebmann uses an emulsion of particles of coagulated egg albumin, measuring the proteolytic power on it of the gastric juice by the amount of dilution necessary to render limpid the contents of the control tube to the same degree as in the test-tube in a given interval of time

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November 16, LVI, No. 46, pp. 2353-2400

136 Acute Poliomyelitis. H. Hochhaus.
137 The Benzidin Test in Forensic Diagnosis of Blood Spots. (Praktische Verwertung der Benzidinprobe für die forensische Blutdiagnose.) H. Merkel.
138 Blood Supply of Sinus Node and its Connection with the Atrioventricular Node. (Blutversorgung des Sinusknotens und etwaige Beziehungen des letzteren zum Atrioventrikularknoten.) W. Koch.
139 Destructive Influence of Osmotic Currents on Bacteria. (Einfluss osmotischer Strömungen auf Entwicklung und Lebenstätigkeit der Bakterien.) F. Holzinger.
140 *Intravenous General Anesthesia. (Intravenöse Narkose mit Aether und Chloroform.) L. Burkhardt.
141 Traumatic Appendicitis. (Traumatische Perityphlitis.) M. Tiegel.
142 *Apparatus for Automatic Extension in Treatment of Fracture of Upper Arm and Shoulder. A. Hofmann.
143 *Treatment of Fracture of the Femur in New-Born Infants. (Zur Behandlung der Oberschenkelbrüche bei Neugeborenen.) G. Zancarini.
144 Negative Influence of Spengler's 1K on Tuberculosis. (Behandlung mit Carl Spengler's 1K.) H. Schaefer.
145 The Sternal Angle. (Zur Nomenklatur und klinischen Bedeutung des Sternalwinkels.) E. Ebstein.

November 23, No. 47, pp. 2401-2456

146 Normal Peristalsis of the Colon. G. Holzknecht.
147 *Cardiac Neuroses. (Herzneurosen.) G. Treupel.
148 *Remote Neuralgiform Affections of Intestinal Origin. (Ueber Intestinale Körperschmerzen.) W. Ebstein.
149 Intravenous Suprarenal Treatment in Severe Cardiovascular Collapse. (Weitere klinische Erfahrungen über intravenöse Suprareninjektionen bei schweren Herz- und Gefässkollapsen.) M. John.
150 Eczema. (Zur Ekzembehandlung.) T. Veiel.
151 *Progress in Differential Pressure Procedures for Intrathoracic Operations. W. Meyer.
152 Behavior of Zinc-Copper Fragments Embedded in the Tissues. (Fremdkörper im Organismus.) H. v. Baeyer.
153 *Connection between Syphilis and Idiocy. (Zusammenhang von Idiotie und Syphilis.) H. Lippmann.
154 *Importance of Chloral for Pathologic-Anatomic Research and for Local Therapeutics. (Wert des Chloralhydrates für pathologischanatomische und lokaltherapeutische Zwecke.) A. Heller.
155 *Prophylaxis and Treatment of Impending Gangrene. (Drohender Fingergangrän bei Raynaudscher Krankheit.) H. Noesske.
156 Can We Prevent Blunders in Diagnosis and Treatment with Fractures and Dislocations? (Wie weit lassen sich Fehldiagnosen und Misserfolge bei Frakturen und Luxationen in der Praxis vermeiden?) R. Grashey.
157 *Treatment of Acute Rhinitis. J. Trumpp.

140. **Intravenous General Anesthesia.**—Burkhardt is convinced that there is no necessity for the anesthetic to traverse organs on its way to the blood and that the best results will be attained by introducing the drug directly into the circulation. After much experimental research he applied this technic in 33 clinical cases, injecting a 5 per cent. solution of ether like a saline infusion. The amount of fluid injected ranged from 200 to 800 c.c. There were no disturbances in breathing in any case nor cyanosis, vomiting or retching during the anesthesia or vomiting afterward in 30 cases. Three of his patients had nausea or vomited twice. In another series of 8 cases he injected a mixture of ether and chloroform or a 7 per cent. solution of ether; transient hemoglobinuria developed in one of these cases. In all the patients the anesthesia was tranquil and free from reflex action. A great advantage of this technic is that the blood pressure does not fall even during a long operation. An over-dose is scarcely to be feared on account of the low concentration, so that it is safer for the inexperienced than the usual inhalation anesthesia. Recovery afterward is more rapid and there are no by-effects. The drug is eliminated more rapidly than when inhaled. He generally precedes the intravenous infusion with the scopolamin-morphin twilight sleep.

143. **Treatment of Fracture of the Femur in the New-Born.**—Zancarini points out the disadvantages of ordinary treatment of obstetric fracture of the femur and describes a simple

method which he has found satisfactory. The leg is flexed on the body similarly to the fetal position, the front of the thigh on the front of the abdomen, the foot reaching to the shoulder, the clavicle serving as the solid support. The trunk is protected with cotton and the bandage is passed around the leg and trunk. This position is borne readily by the new-born infant while it does not interfere with keeping the child clean. No skill is required for its application and the family accepts it more readily than weight extension or more complicated measures. He describes a few cases in which he has examined the children four and seven years after the fracture was cured in this way. The limbs show no trace of injury, not even in a skiagram, and the gait is normal. The leg is immobilized in this way for about twenty days, but the bandage is taken off every day and light massage applied.

147. **Cardiac Neuroses.**—Treupel emphasizes the necessity for long study of the case and winning the patient's confidence so that the particulars of the onset of the disturbances can be made out. This is of the greatest importance for treatment. He has had about 400 cases of this kind, free from organic basis. The neurosis had developed in consequence of increased or abnormal erotic sensations in about a third of his cases; in others after dread or excitement. In the pure neurosis the heart is not enlarged, rather the reverse; he has been impressed with the smallness of the heart in some patients, especially in young men. The patient must be examined sitting, standing and reclining and after exercise. Heart tonics are useless but sedatives and general tonics are indicated, with a light diet and restriction of fluids to about three pints, bed rest is indicated for a day or so occasionally if the patient is leading a strenuous life, and encouragement to exercise if too sedentary. The main point is to convince the patient that his heart is sound and that the subjective disturbances are of little moment. This and time are the chief factors in the cure.

148. **Pains Throughout the Body of Intestinal Origin.**—Ebstein refers to the neuralgiform pains at various points in the body curable by clearing out the clogged digestive tract. The painful affection is generally misunderstood and treatment instituted for rheumatism, etc., as he shows by several examples. The constipation in these cases is beyond relief by ordinary purgatives and enemas of oil are the only means of conquering it, as a rule. An important element in the differentiation is the discovery of tender points where the nerve emerges. He has encountered numerous cases of neuralgia in the knee and hip joint accompanying inveterate constipation and vanishing as the latter was cured. In one such case a robust army officer of 52 had chronic pains in the knees for which no objective cause could be found and the trouble seemed to be a nervous functional disturbance; it was so severe that he had to be lifted on his horse. Under large oil enemas the existing constipation was relieved and the knee trouble subsided with it. In another case an officer had taken all kinds of courses of treatment for supposed rheumatism in his knees but without effect until the oil enemas relieved his tendency to constipation, when the pains vanished. Every return of sluggish bowel action is followed by recurrence of the pain in the knees but the constant progress toward improvement promises final complete recovery. A history of trauma affecting the involved joint may prove misleading. The statements of the patient as to bowel functioning must not be relied on; there may be coprostasis even with diarrhea. The oil enemas soften the feces and then mild laxatives are able to push them along. He does not approve of strong purgatives in these cases.

151. Practically the same article was published in THE JOURNAL, Dec. 11, page 1978.

153. **Connection between Idiocy and Syphilis.**—Lippmann states that examination of 121 children in the asylum for mentally defective at Uchtspringe revealed signs of syphilis in 33.8 per cent. The seroreaction proved an important aid in the diagnosis, and he urges the unfailing application of the Wassermann test in all lying-in and gynecologic hospitals in order to detect the presence of syphilis and institute prophylactic measures. Baisch found that syphilis in women had escaped clinical recognition in fully three-fourths of all cases—not the slightest clinical sign being apparent in this large proportion in which the Wassermann test elicited a

positive response, and spirochetes were found in the placenta and the children showed signs of syphilis. The necessity for prompt specific treatment in such cases is emphasized anew by the discovery of the frequent connection between syphilis and actual idiocy. It also suggests the necessity for mercurial treatment of the mentally defective—astonishing improvements are on record. Even when there is nothing to suggest syphilis, he advises a tentative course of antisyphilitic treatment. This is his routine practice in every case of brain tumor.

154. **Chloral in Local Therapeutics.**—Heller says that autopsy of a number of children who had been treated with potassium chlorate revealed the blood so brown, especially in the lungs and skull, that the question arose in his mind whether the potassium chlorate might not have been responsible for the fatality. In any event, he declares that the same and better therapeutic effects in acute and chronic laryngeal catarrh can be obtained by having the patient take a thimbleful of a 2.5 per cent. solution of chloral into his mouth, throw the head back and roll the fluid around in the mouth, making chewing movements the while but not gargling, and spitting out the fluid when it cannot be retained in the mouth any longer. The head is then thrown back again to let the traces of fluid still remaining find their way back into the throat. This is repeated every half hour and it has a marked curative effect, checking bacterial growth, inducing local hyperemia and transudation while its anesthetic action reduces the tendency to inflammation. Quincke also advocated the use of a 2 per cent. chloral solution in the form of a spray in treatment of throat and mouth inflammatory processes. In tonsillitis he applied it as a powerful cold jet alone or combined with mercuric chlorid, preferring the latter alone only in syphilis, diphtheria and Vincent's angina.

155. **Treatment of Impending Gangrene of the Fingers.**—Noesske reports the further successful application of his method of cutting down to the bone at the tip of the finger parallel to and just below the nail, in treatment of conditions threatening gangrene. It was described in THE JOURNAL, Nov. 6, 1909, page 1605. He places the hand afterward in a suction cupping apparatus, and by this means was able to restore vitality to the fingers recently in a case of Reynaud's disease. The benefit in this affection suggests the possibility that the trouble is the result of local peripheral disturbance in the vascularization instead of the central origin hitherto assumed.

157. **Bolus Alba in Treatment of Coryza.**—Trumpp has applied bolus alba in his own person and in his family and practice with brilliant success as a means of aborting and curing rhinitis, the extreme fineness of the particles sucking up by capillary attraction the bacteria and the secretions and thus drying out the parts while killing the bacteria. He uses an ordinary powder insufflator; success depends on applying a layer of the powder over the entire inflamed surface, repeating the insufflation three or four times in 15 minute intervals at first and later at hour intervals. If there is much swelling a little adrenalin opens a way for the powder. Three or four insufflations the second day generally complete the cure. He applied this bolus treatment also in 4 cases of primary diphtheria of the nose, refraining from serum treatment. In all recovery was complete by the fourth or sixth day, without complications. Prompt recovery was also observed in a case of ozena of a few weeks' duration; the cure has persisted for two months to date. The powder comes away readily when the nose is blown and does no harm if it is swallowed. The best results are attained when the nasal passages are wide and readily accessible.

Virchows Archiv, Berlin

November, CXCVIII, No. 2, pp. 193-38

158 Unusual Findings in Appendicitis. G. Cagnetto.
159 Bacterial Embolism of the Lung. N. Strueff.
160 Action of Animal Albumin on Rabbits. (Wirkung des tierischen Eiweisses auf die Aorta und die parenchymatösen Organe der Kaninchen.) A. Ignatowski.
161 Calcification of Dura. (Ueber Verkalkung der Pachymeninx bei Usura cranii.) K. Nunokawa.
162 Plasma Cells in Progressive Paralysis. (Zur Plasmazellenfrage bei der progressiven allgemeinen Paralyse.) Rheindorf.
163 Patches of Sclerosis in the Spleen. (Induratio lienis fibrosa circumscripta.) I. Poscharissky.
164 Obliterating Mastitis. A. Ingier
165 Phagocytosis not a Factor in Defense against Infectious Disease. (Ueber die Spirochaete pallida und Spirillum Obermeieri, ihre intrazelluläre Lagerung und deren Bedeutung.) M. Rabinowitsch.

Wiener klinische Wochenschrift, Vienna

November 25, XXII, No. 47, pp. 1623-1662

166 Production of Antibodies. (Theorien der Antikörperbildung.) K. Landsteiner.
167 *Serodiagnosis of Syphilis. (Beobachtungen über die Diagnose der Syphilis vermittels der Wassermannschen Reaktion.) J. Stopczanski.
168 Toxic and Non-Toxic Putrefaction in the Intestines. (Studien über Darmfäulnis.) A. Rodella.
169 Phototherapy applied to Rectum and Vagina. (Lichtbehandlung auf rektalem und vaginalem Wege.) A. Foges and A. Jungmann.
170 Disinfection of the Skin. (Zur Technik der Hautdesinfektion.) J. Kratochvil.
171 *Roentgen-Ray Treatment of Goiter. (Zur Röntgenbehandlung des Kropfes.) G. Schwarz.

December 2, No. 48, pp. 1663-1696

172 Climacteric Functional Disturbances of Glands with an Internal Secretion. (Zum klinischen Bilde des Klimakteriums.) A. Gluzinski.
173 Symptomatology of Cardiac Neuroses. (Zur Symptomatologie der Herzneurosen.) L. Braun and A. Fuchs.
174 The Problem of Anaphylaxis. G. Salus.
175 Prophylaxis of Measles in Hospitals. (Schutz der Kinderspitäler gegen Maserninfektion.) N. Berend.
176 Symptoms of Exophthalmic Goiter with Neoplasms in the Thyroid. (Ueber Basedowsymptome bei Schilddrüsenneoplasmen.) I. Löwy.

167. **Serodiagnosis of Syphilis.**—This article gives the experience at Cracow with the Wassermann test applied in 103 cases of various dermatologic affections. It was found that more intense specific treatment was necessary to transform a positive into a negative reaction than was required to banish the manifest symptoms. The question is now to determine whether tabes and paralysis will develop later in persons given treatment on the basis of the seroreaction.

171. **Roentgen Treatment of Goiter.**—Schwarz is director of the Roentgen institute connected with v. Noorden's clinic at Vienna and his experience has taught that ordinary goiter contraindicates Roentgen treatment as a rule, and operative measures should be considered. With exophthalmic goiter, Roentgen treatment should be given a trial for a time, with operative treatment in case it fails to relieve. With severe goiter causing stenosis complicated with exophthalmic goiter, he advises an operation at once, followed by Roentgen exposures.

Zentralblatt für Chirurgie, Leipsic

November 27, XXXV, No. 48, pp. 1641-1680

177 Experimental Occlusion of Mesenteric Blood Vessels and Intestinal Stenosis. (Die experimentelle Verschliessung der Mesenterialblutgefässe und die Ursache einiger Darmstenosen.) G. Bolognesi.

Zentralblatt für Gynäkologie, Leipsic

November 13, XXXIII, No. 47, pp. 1609-1632

178 Extraperitoneal or Transperitoneal Cesarean Section. (Extraperitonealer oder transperitonealer Kaiserschnitt?) P. Mathes.
179 Disinfection of Parturients. (Zur Disinfektion Kreissender.) S. Gottschalk.
180 *Application of the Alexander-Adams Operation during Pregnancy and Puerperium. (Anwendung der Alexander-Adams'schen Operation in der Schwangerschaft und im Wochenbett.) P. Bröse.

November 27, No. 48, pp. 1634-1664

181 *Retrouterine Fixation of the Round Ligaments. (Neue Methode der intraperitonealen Verkürzung der Ligamenta rotunda.) F. Franke.
182 Cervico-Vaginal Fistula from Abortion. (Zwei Fälle von Mutterhals-Scheidenfistein bei Abortus.) A. N. Pawlow.

December 4, No. 49, pp. 1665-1696

183 Unfavorable Experiences with Obstetric Epidural Injections. (Wert der epiduralen Injektionen bei den Gebärenden.) M. Tobiaszek.
184 *Gynecologic Examination. (Zur gynäkologischen Untersuchung.) P. Bröse.

180. **Alexander-Adams Operation during Pregnancy.**—Bröse reports three cases in which the retroflexed gravid uterus caused such disturbances that he was compelled to interfere. He shortened the round ligaments by the Alexander-Adams technic without interrupting the pregnancy which continued to natural delivery. In two other cases he performed this operation not long after an abortion, with equally favorable results.

181. **Retrouterine Fixation of the Round Ligaments.**—Franke sutures a loop of the round ligament on each side of the rear uterine wall, drawing it through a slit in the broad

ligament from 1.5 to 3 cm. apart from the uterus and 1 or 2 cm. below the round ligament. He has applied this method in seventeen cases of retroflexion and has entirely abandoned for it the Alexander-Adams technic.

184. **Gynecologic Examination.**—Bröse insists on the necessity for careful examination of the external genitalia as a preliminary to investigation of the internal. By this means he has been able to detect gonorrheal infection in the urethra which otherwise he would have overlooked. He emphasizes further the necessity for protecting the hand with a rubber glove to avoid possible infection of self and of other patients afterward. He further declares that if a gonorrheal process is discovered in the urethra or surrounding glands and there is a probability that the infection has not reached the cervix, it is important to refrain from internal examination unless there are compelling reasons for it as otherwise the gonococci may be carried to the cervix.

Gazzetta degli Ospedali e delle Cliniche, Milan

November 9, XXX, No. 134, pp. 1417-1424

185 *Mice in Transmission of Certain Infectious Diseases. (Il topolino e la trasmissione di alcune malattie infettive.) P. Baraldaschi.

186 *Experimental Research on Neuroses of the Sympathetic System. S. Licciardi.

November 11, No. 135, pp. 1425-1432

187 *Differentiation of Effusions of Mechanical Origin. (Nuova reazione dei versamenti sierosi d'origine meccanica.) G. Breccia.

188 Galvanism in Treatment of Heart Disease. (La galvanizzazione spino-precordiale nelle cardiopatie.) C. Colombo.

November 14, No. 136, pp. 1433-1448

189 Heart Stimulants. (L'uso dei cardio-cinetici.) F. Battistini.

November 16, No. 137, pp. 1449-1456

190 Maxillary and Frontal Sinusitis. (Studio delle sinusiti mascellari e frontali.) G. Bianchera.

191 *Diaphoresis in Treatment of Nephritis. (La diaforesi termica nella terapia delle nefriti.) C. Colombo.

November 21, No. 139, pp. 1465-1480

192 Operative Treatment by Menge's Method of Retrodisplacement of Uterus. (L'operazione del "Menge" nel trattamento delle retrodeviazioni dell'utero per via laparatomica.) L. A. Oliva.

November 23, No. 140, pp. 1481-1488

193 Significance and Pathogenesis of Glycosuria. N. Dominicis.

194 Glass Bell and Air Pump in Local Treatment of Neurasthenic Sexual Impotency. (La erezione pneumatica del pene nella cura della nevrastenia sessuale.) C. Colombo.

185. **Mice in Transmission of Disease.**—Barabaschi states that he found the pneumococcus, the anthrax bacillus, streptococcus and staphylococcus, alone or associated, in the intestines of a number of mice caught in various private houses, showing that rats and mice are liable to transmit various infections besides the plague. The *Bacillus subtilis* and the *mesentericus* were also found in large numbers, and although the latter is generally regarded as a harmless saprophyte yet the *subtilis* was found in pure culture in a chronic glandular affection reported by Ferrarini. The excreta of the mice, drying and scattering in dust, may transmit infection even without more direct contact. The mice with the pneumococci were caught in houses where there had recently been pneumonia. The gravest danger from this source is incurred by persons working in granaries, etc., where mice abound and their dejecta are scattered over the substances handled.

186. **Neuroses in Sympathetic System.**—Licciardi reports experiments on dogs which confirm his assumption that there is always some organic basis for the alleged neuroses of the sympathetic system.

187. **Differentiating Reaction of Effusions.**—Breccia states that effusions of mechanical origin, that is, resulting from disturbance in the circulation, possess the property of precipitating a silver salt in solution, while in pleuritic and peritonitic effusions there is no precipitation. The technic is similar to that of Axenfeld's reaction.

191. **Diaphoresis by Heat in Treatment of Nephritis.**—Colombo ascribes the benefit from thermic diaphoresis not only to the diversion of the toxins from the kidneys to the skin but to the rest for the kidneys permitted by the vicarious action of the skin. Both in the acute and chronic forms he has always witnessed great relief follow diaphoresis. The patient does not sweat in a hot bath, the water closes the pores, but sweating follows afterward, as the patient lies wrapped in blankets with a cold cloth on his brow. Light baths and Roman baths are especially useful in heart affections and valvular defects. The edema is absorbed and the vasodilatation relieves the high blood pressure.

Policlinico, Rome

November 28, XVI, No. 48, pp. 1569-1540

195 Surgery of the Common Bile Duct. (Contributo alla chirurgia del coledoco.) V. Gandiani. Commenced in No. 47.

November, Medical Section, No. 11, pp. 477-524

196 Syndromes Induced by Lesions in Lower Spinal Cord. (Le sindromi dell'epicono midollare, del cono terminale, della coda equina.) N. Sforza.

197 Syphilitic Meningoencephalitis. (Le iniezioni endovenose di sublimato nella sifilide cerebrale.) A. Treroroli.

198 Sudden Thymus Deaths in Adults. (Contributo allo studio delle morti improvvise timiche in adulti.) B. Carlo.

November, Surgical Section, No. 11, pp. 477-520

199 Elastic Fibers in the Bladder and Seminal Vesicles with Prostatic Enlargement. (Ricerche anatomo-patologische sul comportamento delle fibre elastiche nella vescica e nelle vescichette seminali del prostatici.) G. Razzaboni.

200 Histopathology of Hypertrophied Prostate. E. Savagnone.

201 Surgery of the Ureter. (Sulla ureteroneocistostomia nelle ferite chirurgiche dell'uretere.) S. Solieri.

202 Tolerance for Various Kinds of Sugars in Normal and Splenectomized Animals. (Tolleranza per varie specie di zuccheri in animali sani e poi smilzati.) G. Quarta. Commenced in No. 10.

Riforma Medica, Naples

November 15, XXV, No. 46, pp. 1261-1288

203 *Hematologic Diagnosis in Fevers. (Sul valore della emodiagnosi nelle diverse forme di febbricole.) A. Cantani.

204 Skin Tuberculin Reaction in Acute Serofibrinous Pleurisy. (La cutireazione alla tubercolina nei malati di pleurite acuta siero-fibrinosa.) V. Barbieri.

November 22, No. 47, pp. 1289-1316

205 *Experimental and Clinical Study of Radical Treatment of Inguinal Hernia. (Un particolare nella cura radicale dell'ernia inguinale.) C. Mantelli.

206 Syphilitic Jaundice. (L'ittero sifilitico del periodo secondario.) E. Fenoglietto.

November 29, No. 48, pp. 1317-1344

207 Chemical and Physiologic Research on Extrapulmonary Injection of Oxygen. (Ossidazione e sovrossigenazione extrapolmonare.) F. Sicuriani.

203. **Serodiagnosis in Various Fevers.**—Cantani here reports his experiences and the conclusions therefrom in 300 cases of various fevers in which the blood was subjected to different tests. The agglutinating test proved extremely important for recognition of Malta fever. In 32 febrile tuberculous cases the agglutination for Malta fever proved positive once and it was learned that the patient had had an attack of Malta fever the year before. Examination of the blood will give the clue to many puzzling cases previously differentiated as typhoid or Malta fever. He remarks that it is hard to refrain from accepting without question the diagnosis previously made when the symptoms seem to confirm it, but the discovery of leucocytosis with predominant polynuclears should suggest pus fever. Cultivation of a staphylococcus from the blood, with agglutination of this germ by the patient's own serum, 1 to 1,000, led to the discovery of a small abscess in the prostate in one case of this kind in his experience in which the patient was being treated for typhoid. In one case a slight suppurative process had been determined by the Malta fever germ in the course of Malta fever, which obscured the blood findings. He does not decide in favor of the diagnosis of fever from autointoxication until examination of the blood by every means and other tests has excluded all the other known possible causes.

205. **The Nerves in the Radical Operation for Hernia.**—Mantelli thinks that surgeons are inclined to neglect the nerves in treatment of hernia; they strive to refrain from injuring them but otherwise pay no attention to them. He is convinced that the pains and disturbances sometimes following a herniotomy are due to unsuspected injury of the nerves or neuritis. Examination of 50 patients with bilateral inguinal hernia for which the radical operation was done during 1908 has shown that in every instance in which one or more even of the smaller branches of the nerves were involved in the deep suture neuritis followed, sometimes rapidly healing, in other cases lingering for a time and in others becoming chronic. In one case an ascending neuritis developed, the pain and tenderness in the paravertebral, kidney, inguinal and crural region on that side incapacitating the woman for a year to date. He adds that inclusion of the

nerves, even the minute ones, in the suture might lead to paresis of the muscles innervated by them, and thus explain the tendency to recurrence in certain cases. In conclusion he reviews the anatomic course of the nerves in the region of the most common hernias and the means to refrain from injuring them.

Hospitalstidende, Copenhagen

October 6, LII, No. 40, pp. 1249-1288

208 Treatment of Prolapse of the Uterine Cervix and Pouch of Douglas. (Om Behandling af Prolaps af Collum uteri og Fossa Douglasii.) J. Kaarsberg.

209 *Treatment of Placenta Prævia. E. Hauch. Commenced in No. 39.

October 13, No. 41, pp. 1289-1320

210 *Seroreaction with Human Milk. (Wassermann-Reaktion med Mælk.) O. Thomsen.

October 20, No. 42, pp. 1321-1360

211 Serotherapy in Cerebrospinal Meningitis. C. E. Bloch.

October 27, No. 43, pp. 1361-1392

212 Illusions in Estimating Passage of Time. (Illusioner med Hensyn til Bedømmelsen af Tidsafstande.) K. Pontoppidan.

November 3, No. 44, pp. 1393-1432

213 Gastrointestinal Disturbances from Habitual Swallowing of Air: Aerophagia. F. Vogelius.

November 10, No. 45, pp. 1433-1472

214 Kraurosis Vulvæ. I. P. Hartmann.

215 Inflammation of the Eyes Due to the Toxins of the Gonococcus. (Subconjunctivitis epibulbaris gonorrhoica.) C. F. Heerfordt. Commenced in No. 43.

209. **Treatment of Placenta Prævia.**—Hauch analyzes the experiences at Leopold Meyer's maternity at Copenhagen, comparing the outcome with that of other clinics. The verdict in regard to the various obstetric operative measures is in favor of the inflatable bag in the clinic as being the safest for the child, while exposing the mother to no more danger than with other methods. In general practice version should be given the preference, especially when the child is viable. The bag must be introduced into the ovum or at least into the chorion. The bag must be large enough to insure the passage of the fetus; it is not generally necessary to weight it. The details of the various cases are tabulated for comparison. The presentation did not seem to have much influence. The bag was used in 144 cases with a mortality from anemia of 5.2 per cent.

210. **Serodiagnosis of Syphilis with Milk.**—Thomsen has been applying the Wassermann test to fresh breast milk and has found that positive findings were obtained soon after delivery but then the reaction became negative in many cases. Comparison of the findings in 17 syphilitic and 82 non-syphilitic mothers showed that a positive reaction was obtained from the milk in some of the non-syphilitic women but it was very much weaker than the reaction obtained from the milk of syphilitic parturients.

Ugeskrift for Læger, Copenhagen

October 14, LXXI, No. 41, pp. 1117-1142

216 *Importance of Continuous and Digestive Hypersecretion and Microscopic Retention for Diagnosis of Gastric Ulcer. (Om Betydningen af kontinuerlig og digestiv Hypersekretion og mikroskopisk Retention for Diagnosen af Ulcus ventriculi.) G. Jørgensen.

October 21, No. 42, pp. 1143-1170

217 Internal Ear Disease as Consequence of Middle-Ear Lesions. (Om Labyrintitis som Følge af Mellemørebetændelse.) Schousboe.

November 4, No. 44, pp. 1201-1226

218 *Twenty-six Cases of Cancer in the Chest. (Kliniske Bidrag til Kundskaben om maligne Tumores i Brysthulen.) Israel-Rosenthal. Commenced in No. 43.

216. **Clinical Importance of Gastric Hypersecretion and Microscopic Retention.**—Jørgensen has studied this subject with 68 patients, including 36 with symptoms of gastric ulcer and 14 with mild symptoms on the part of the stomach, frequently accompanied with constipation, and 13 with almost intractable chronic constipation. The finding of a small continuous hypersecretion—10 c.c. secretion at least in the fasting stomach—has no differential import as it is a frequent discovery in patients with symptoms on the part of the digestive tract of various origins. At the same time the discovery of a more or less continuous hypersecretion of constantly more than 30 c.c. is a strong argument in favor of the diagnosis of gastric ulcer, while 100 c.c. of stomach content with an acidity of 80 one hour after a test breakfast speaks in favor of ulcer. If the stomach content is about 65 c.c., with an acidity of 80, this is somewhat of an argument in favor of gastric ulcer but not to be depended on implicitly. Continuous hypersecretion was observed in 83 per cent. of his ulcer cases, 93 per cent. in the second group and in 33 per cent. of the third group. Hypersecretion was thus manifest in 54 of the 68 patients, that is, in 79 per cent. Microscopic retention has no differential import but even slight macroscopic retention indicates some organic gastric derangement. Digestive hypersecretion was evident in 42 per cent. of his 36 cases of ulcer; in 29 per cent. of the 14 cases in the second group, and in 11 per cent. of the 18 in the third group.

218. **Twenty-six Cases of Cancer in the Chest.**—Operative removal was not attempted in any case. Three of the cancers were in children between 5 and 12, and 3 others between the ages of 30 and 40. Among the 17 primary tumors all were sarcomas except 1 and 5 of the 9 secondary cancers. The duration of the affection after the first symptoms was less than six weeks in all the primary cases; the secondary cancers usually proved fatal in one or two months. The temperature was normal throughout in 9 of the 26 cases. He does not include cancers of the esophagus in this review. Seven of the 17 primary and one of the 9 secondary cancers were in well-to-do patients. In one 5-year old boy a mediastinal sarcoma developed with an acute onset and ran its course in five weeks after a trauma, but a cough had been observed a week before the latter. In another case a widow of 42 noticed the first symptoms of secondary malignant pleuritis three weeks after a blow in the back. Among the 12 cases with autopsy there were 2 primary sarcomas in the pleura, 3 in the lungs, 3 in the mediastinum and 3 in the thymus, with 1 primary carcinoma in the mediastinum. The abdominal organs were the seat of metastases in nearly every case, especially the liver. In the 9 secondary cases with autopsy the primary cancer was in the ovary, testicle or breast.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

JAHRESBERICHT ÜBER DIE FORTSCHRITTE DER INNEREN MEDIZIN IM IN- UND AUSLANDE. Von Dr. Schreiber in Magdeburg und Dr. Rigler in Leipzig. Bericht über die Jahre 1902 und 1903. II. Band. Pp. 1571. Price, 30 marks. Leipsic: Verlag von Dr. Werner Klinkhardt, 1909.

JAHRESBERICHT ÜBER DIE FORTSCHRITTE DER INNEREN MEDIZIN IM IN- UND AUSLANDE. Von Dr. Schreiber in Magdeburg und Dr. Rigler in Leipzig. Bericht über das Jahr 1908. II. Band. Pp. 938. Price, 20 marks. Leipsic: Verlag von Dr. Werner Klinkhart, 1909.

HANDBUCH DER BIOCHEMIE DES MENSCHEN UND DER TIERE. Von Prof. Dr. Phil. et med. Carl Oppenheimer in Berlin. Twenty-second and Twenty-third Instalments (in one pamphlet). Pp. 1032. Price 10 marks. Jena: Verlag von Gustav Fischer, 1909.

MANUAL OF THE DISEASES OF THE EYE. Japanese Translation of Sixth Edition. By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Department. Cloth.

THOUGHTS ON FRATERNITY. A collection of writings which have appeared from time to time. By Lloyd A. Clary, M.D. Paper. Pp. 55. Price, 60 cents. Kansas City, Mo.: J. W. Smith, 25 Live Stock Exchange Bldg., 1909.

DISEASES OF CHILDREN. Edited by Abraham Jacobi, M.D., LL.D., Consulting Physician Mt. Sinai, Bellevue and German Hospitals, etc. Pp. 828, with 34 illustrations. New York: D. Appleton & Co., 1910.

DISEASES OF THE STOMACH. By S. H. Habershon, M.A., M.D., F. R. G. P. Pp. 565, with 8 colored and 11 black-and-white plates. Price, $2.50. Chicago: Chicago Medical Book Co., 1909.

A TEXT-BOOK OF THE DISEASES OF THE EAR. By Macleod Yearsley, Senior Surgeon to the Royal Ear Hospital. Pp. 452. Price, $4. Chicago: Chicago Medical Book Co., 1908.

DIE PATHOLOGIE UND THERAPIE DER LEPRA. Von Wilhelm Ebstein, Dr. und o. ö. Professor der Medizin. Pp. 112. Price, 3.50 marks. Leipsic: Verlag von Dr. Werner Klinkhardt, 1909.

AMERICAN MEN OF SCIENCE. A Biographical Directory. Edited by J. McKeen Cattell. Pp. 364. Price, $5. New York: The Science Press, Substation 84, 1906.

REPORT OF THE PRESIDENT OF THE BOARD OF HEALTH OF THE TERRITORY OF HAWAII. 1909. Paper. Pp. 224. Honolulu, 1909.

THIRD REPORT OF THE BABIES' DISPENSARY AND HOSPITAL OF CLEVELAND. 1909. Paper. Pp. 41.

REPORT AND APPEAL OF THE GOVERNORS OF THE ALBANY (N. Y.) HOSPITAL, 1909. Paper. Pp. 42.